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THE PHILIPPINE JOURNAL OF SCIENCE

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REVISION OF PHYMATINÆ (HEMIPTERA, PHYMATIDÆ)

By NICHOLAS A. KORMILEV
New York, N.Y., U.S.A.

NINETEEN PLATES

SUMMARY

The author revises the subfamily Phymatinæ and redescribes the majority of the species of the genus *Phymata* Latreille (1802). The genus *Phymata* Latreille is split into three genera: *Phymata* Latr. (1802), *Anthylla* Stål (1876) restored as a genus, and *Neoanthylla* Kormilev (1951) elevated to the generic rank. The fourth genus of the subfamily, *Paraphymata* gen. nov. for *P. saileri* sp. nov. (Haiti) is described. The genus *Phymata* Latreille, in the new sense, is subdivided into four subgenera: *Phymata* Latr. s. str., *Neophymata* subgen. nov. for *Phymata bosqui* Kormilev (1950), *Euphymata* subgen. nov. for *Phymata superba* sp. nov. (Haiti), and *Phymatispa* Kormilev (1951).

The new species and subspecies of the genus *Phymata* Latr. described are: *P. ampliata* sp. nov. (Paraguay, Brazil), *P. barberi* sp. nov. (Mexico), *P. beieri* sp. nov. (Bolivia), *P. centralis* sp. nov. (Panama), *P. colombiana* sp. nov. (Colombia), *P. inconspicua* sp. nov. (Venezuela), *P. malaisei* sp. nov. (Venezuela), *P. mayri* sp. nov. (Paraguay), *P. minuta* sp nov. (Honduras), *P. carneipes subangulata* ssp. nov. (Brazil), *P. chilensis brasiliensis* ssp. nov. (Brazil), *P. fasciata panamensis* spp. nov. (Panama, Costa Rica), *P. granulosa evansi* ssp. nov. (Mexico,

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El Salvador), *P. pacifica hainesi* ssp. nov. (Mexico), *P. roqueensis halaszfyi* ssp. nov. (Peru), *P. severini dyeri* ssp. nov. (Honduras), *P. simulans explanata* ssp. nov. (Argentina, Brazil, Paraguay), *P. simulans recifensis* ssp. nov. (Brazil), and *P. simulans surinamensis* ssp. nov. (Guiana).

Phymata acuta Stål, (1860) is restored as a good species, and the erroneous identifications of *P. longiceps* Stål (1860) and *P. simulans* Stål, are rectified; *Phymata torresi* Kormilev (1950) is put into synonymy with *P. acuta* Stål, and *P. orfilai* Kormilev (1950) into synonymy with *P. cinnamomea* Handlirsch (1897). *Phymata marginata* var. *interjecta* Dudich (1922) and *P. maculipennis* var. *aberrans* Dudich (1922) are considered as good species, and not only subspecies. The status of *Phymata erosa* (L.) (1758) and *P. scorpio* (De Geer) (1773) is discussed, and the last put into synonymy with the former. *Phymata fasciata georgiensis* Melin (1930) is fixed as the typical subspecies for *Phymata fasciata* (Gray) (1832) and *P. wolffi* Stål (1876) is put into synonymy with *P. fasciata* (Gray). *Phymata mystica* Evans (1931) is considered as a subspecies of *P. fasciata* (Gray), and *P. metcalfi* Evans (1931) as a subspecies of *P. americana* Melin (1930). *Phymata wygodzinskyi* Kormilev (1950) and *P. anchietai* Kormilev (1951) are put into synonymy with *P. pulchra* Dudich (1922).

It was established that *Phymata feredayi* Scott (1870) and *Phymata conspicua* Scott (1870) are neotropical species, and not from New Zealand; the first is identical with *Phymata erosa* (L.) (1758) and the second with *Phymata parviceps* Handlirsch (1897), therefore *P. feredayi* Scott is put into synonymy with *P. erosa* (L.) (1758) and *P. parviceps* Handlirsch into synonymy with *P. conspicua* Scott.

Phymata romani Melin (1930) is put into synonymy with *P. carneipes* Mayr (1865) and *P. stali* Melin (1930) into synonymy with *P. communis* Handlirsch (1897).

Phymata chilensis Handlirsch (1897) was previously considered as a subspecies of *P. carinata* (F.) (1803), but as it could not be established that they are cospecific, on the contrary, all indications are different species, *P. chilensis* Handlirsch is elevated to the specific rank. *Phymata tessera* Hoberlant (1947) is restored as a subspecies of *P. fortificata* H. Sch. (1844). *Phymata sanjuanensis* Kormilev (1950) and *P. argentina* Pennington (1919) are considered as subspecies of *P. fortificata*

H. Sch., therefore *P. argentina montana* Kormilev (1951) is transferred to the latter. *Phymata monrosi* Kormilev (1950) is considered as a subspecies of *P. chilensis* Handlirsch, and *P. chiriquiensis* Melin, as a subspecies of *P. granulosa* Handlirsch (1897).

Phymata horvathi Handlirsch (1898) is transferred to the genus *Neoanthylla* Kormilev (1951) as its second species.

The type of *Phymata fasciata* (Gray) (1832) cannot be found either in the British Museum or Oxford Museum, therefore it is selected as neotype the holotype of *Phymata fasciata georgiensis* Melin (1930), because the last is considered as a typical subspecies of the former. The neotype is deposited in the Natural History Museum, Stockholm.

Handlirsch has not selected the holotypes, but all available specimens are considered as cotypes, sometimes mixing the different species to fix them. Among his cotypes selected are the lectotypes for the following species: *Phymata bogotana* Handlirsch (1897), *Phymata chilensis* Handlirsch (1897), *Phymata cinnamonea* Handlirsch (1897), *Phymata communis* Handlirsch (1897), *Phymata granulosa* Handlirsch (1897), *Phymata maculipennis* Handlirsch (1897), and *Phymata parva* Handlirsch (1897).

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I am also indebted to my friend Mr. Carlos A. Wappers, the artist of Buenos Aires, who has made the drawings of *Paraphymata saileri* gen. nov., sp. nov., and *Phymata (Euryphymata) superba* subgen. nov., sp nov., respectively.

HISTORY

The first species of Phymatinæ, *Cimex erosus*, was described by Carolus Linnæus [(1758) 443] from Surinam. A little later Fabricius described the second species, *Acanthia crassipes* from Europe [(1775) 695], and nineteen years later the third, *Acanthia monstrosa*, also Europe [(1794) 74]. For these species Latreille erected the first genus, *Phymata* [(1802) 247]. The next year Fabricius created a genus *Syrtis* [(1803) 122], in which, besides the five species of *Phymata*, he put one species of *Harmostes* (Coreidæ) and three of *Macrocephalus* (Macrocephallinæ). Laporte separated the genus *Phymata* into two genera: *Phymata* for *P. erosa* (L.), with short fourth antennal segment, and *Discomerus* for *P. crassipes* (F.) and *P. monstrosa* (F.), with long fourth antennal segment [(1832) 14]. For these two genera and for *Macrocephalus* Swederus he created a new family "Phymatites." Rambur changed the name of Laporte in "Syrtides" [(1842) 167]. Amyot & Serville synonymized the genus *Discomerus* Laporte with *Phymata* Latreille, transformed the family "Phymatites" in a tribe "Spissipedes," and split the latter into Phymatidæ for the genus *Phymata* and Macrocephalidæ for *Macrocephalus* and *Oxythyreus* Westwood [(1843) 288]. Stål separated from *Phymata* the species *P. nervoso-punctata* Signoret (1863) and created for it a new genus *Anthylla* [(1876) 131]. Handlirsch erected the third subfamily Carcinocorinæ for two oriental genera *Carcinochelis* Fieber and *Carcinocoris* Handlirsch, the former being formerly included into Macrocephalinæ [(1897) 143]. In Phymatinæ Handlirsch synonymized *Anthylla* with *Phymata*. Two years later Kirkaldy changed the name of the family in Macrocephalidæ, but this was accepted only by a few hemipterologists, so that now the majority use the old name Phymatidæ. The later authors, who have treated Phymatinæ, have not introduced any changes at the generical rank, considering the subfamily as monogeneric. A few years ago [(1951) 54], I have divided the genus *Phymata* Latreille into four subgenera: *Phymata* Latr. s. str., *Phymatispa* Kormilev for *P. fortificata* and its allies, *Anthylla* Stål as subgenus for *P. nervoso-punctata*, and *Neoanthylla* Kormilev for *P. bucki* Kormilev. In this revision further changes are proposed: *Anthylla* Stål is revalidated as a genus and *Neoanthylla* Kormilev is elevated to the generic rank, then a new genus is created, *Paraphymata* for *P. saileri* sp. nov.

The genus *Phymata* Latreille is divided into four subgenera: *Phymata* Latr. s. str., *Phymatispa* Kormilev for *P. fortificata* H. S. and *P. paradoxa* Kormilev, and two new subgenera: *Neophymata* for *P. bosqui* Kormilev and *Euryphymata* for *P. superba* sp. nov.

PHYLOGENY AND ZOOGEOGRAPHICAL DISTRIBUTION

The family Phymatidæ is closely allied to Reduviidæ, so that some of the ancient authors, for example Shiödte [(1869) 3], put them together, but in spite of much alikeness in the general structure, of which we will speak later, it is a good family.

Phymatidæ can be divided into two big groups: the first group belong to the subfamilies Macrocephalinæ and Carcinocorinæ, and to the second Phymatidæ. The separation from the Reduviidæ probably occurred in early Cretacean or late Jurassic period, though we cannot be sure as the fossil Phymatidæ are yet unknown. Handlirch placed this separation into Cretacean. The place of this separation was probably South America (Archy-Brazil or Archy-Guiana). Judging by actual distribution of Phymatidæ, we can suppose that the most ancient subfamily is Macrocephalinæ, distributed in the warmer parts of the South and North America, Ethiopian Region in Africa, and Oriental Region in Asia. In the Palæarctic and Australian Regions they are absent. In Malgash Region Macrocephalinæ were not found, but it is not excluded that they will be found there one time or another. This distribution induces us to think that they should separate from Reduviidæ and spread across the ancient Gondwana-continent after segregation of Australia from it, but before the main part split into three pieces: South America, Africa, and Indo-Malasia. In the latter they formed a secondary distributional center, and later, when the land-bridge with Africa ceased to exist, produced a curious offshoot, the subfamily Carcinocorinæ, which is unique among Hemiptera for its claw-shaped forelegs. Macrocephalinæ in America are represented by two genera[1]: the relict, monophyletic genus *Extraneza* Barber, which bears trisegmented foretarsi, tibiæ rounded on the dorsal surface and mesosternal carina absent, and a flourishing polyphyletic genus *Macrocephalus* Swederus. In the Ethiopian Region, Macrocephalinæ are represented by only three genera, all very rare: *Narina* Distant, *Eurymnus* Bergroth, and *Paragreuocoris* Carayon. In the Oriental Region, Macrocephalinæ have six genera, some of them with numerous species: *Cnizocoris* Handl., *Oxythreus* Westw., *Amblythyreus* Westw., *Agreuocoris* Handl., *Diurocoris* Maa, and *Glossopelta* Handl.

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[1] Recently Maa [(1956) 109] raised the subgenus *Lophoscutus* Kormilev to a generic rank, which I held as premature because the differences between *Macrocephalus* and *Lophoscutus* are not yet well defined to justify this rise, and many of the Central American species should be examined previous to forming a definite conclusion.

In America, Macrocephalinæ are distributed from the central part of the U.S.A. (Kansas, Kentucky) to North and East Argentina (Tucumán, Entre Rios). In Chile they are absent. It is significant, that Macrocephalinæ, as more thermophylic, have not followed Phymatinæ into the Palæarctic Region, when the land-bridge with Europe was established. In Africa, Macrocephalinæ were found only sporadically from French West Africa and Belgian Congo to Cape of Good Hope. In Asia they are distributed from India, across Indo-China to Southern and Eastern China. Some localities for Macrocephalinæ which were placed by Handlirsch in Tibet, conforming the recent rectification of Maa, are in China.

Carcinocorinæ have only two genera: *Carcinochelis* Fieber and *Carcinocoris* Handl., each with a few species.

Phymatinæ are much younger than Macrocephalinæ. They should separate from the Macrocephalinæ when the land-bridge between South America and Africa was broken off, but as a less thermophylic subfamily they penetrated across North America into the Palæarctic Region and spread over all warmer parts of Europe, North Africa, Syria, Caucasus, Central Asia to Far East. In North America they go so far northward as the southern parts of Canada, and so far southward as North Patagonia in Argentina and Bio-Bio in Chile. One specimen of *Phymata chilensis pampeana* Kormilev was found near the Gulf of San Jorge in Central Patagonia. In Europe they go to Southwest Germany, Czechoslovakia, Central Russia to Sarepta on Lower Volga, but they were found sporadically in Southern Finland, though they are absent in Great Britain, the bigger part of Germany (with exception of Southwest Germany), and in Scandinavia.

SYSTEMATICAL POSITION

As I have said, Phymatidæ are very closely allied to Roduviidæ, but the majority of authors have put the former systematically near Tingidæ, Aradidæ, and Cimicidæ. Dufour, who was the first to investigate the internal organs of *Phymata*, notwithstanding the fact that his investigations clearly showed the affinities with Reduviidæ, also put it together with *Tingis*, *Aradus*, and *Cimex*. The first authors who indicated the relationship with Reduviidæ were Reuter and Schiödte, but it is to the credit of Handlirsch to have definitely fixed their position near Reduviidæ.

The principal characters, which separate these two families are:

1. Characteristic transversal furrow on the head of Reduviidæ is absent in Phymatidæ. Phymatidæ have two transverse furrows on dorsal surface of head, separating frontal processes from preocelar, and latter from ocelar, respectively, but they have a different origin. Macrocephalinæ and Carcinocorinæ have none.

2. Structure of the antennæ is quite different; fourth segment in Phymatidæ is always stout, cylindrical or fusiform, in Reduviidæ filiform.

3. Metathoracical odoriferous glands, as Doctor Carayon has stated in a letter, are situated on the ventral side between the thorax and abdomen, where they join, and not in the coxal cavities of the hind legs, as in Reduviidæ. Doctor Carayon considers this a primitive disposition. These glands are completely different from all known in Reduviidæ not only by their conformation, but even more so by their position. It is curious to note, that this glandular apparatus in Phymatidæ, conforming to Doctor Carayon, has more common points with Pachynomidæ and Elasmodemidæ, than with that of Reduviidæ. (Plate 19, fig. 372)

4. Dorso-abdominal glands in the nymphs are only two in Phymatidæ, whereas in Reduviidæ, at least in the genera which I could examine, they are three. These glands are visible also in adults in the form of small chitinuos sacks.

5. Genital apparatus of the females, as Doctor Carayon has indicated in the same letter, in *Phymata* at least, has only three ovarioles in each ovarium, whereas in Reduviidæ they are generally seven. (Plate 19, fig. 371)

6. Tarsi in Phymatidæ are bisegmented, in Macrocephalinæ and Carcinocorinæ they are absent on the fore-tibiæ, with exception of the genus *Extraneza* Barber, which bears three on

the forelegs. In Reduviidæ, with a few exceptions, they are three-segmented.

7. Form of the forelegs in Phymatidæ are of the "Mantis"- or "Cancer"-type, with fore-femora enormously inflated, mostly subtriangular, whereas in Reduviidæ, though the subfamily Emesinæ has them of the "Mantis"-type, they are never so dilated and are not subtriangular.

8. Venation of the membrane and the hind wings is also somewhat different from Reduviidæ. In Phymatinæ the basic character of the venation are two or three cells at the base of the membrane, formed by *M, Cu* and *AI,* the other veins are simple or bifurcated, more rarely anastomosed. In Macrocephalinæ and Carcinorinæ one or two big cells, and the simple veins greatly reduced in number. In Reduviidæ generally *M* and *Cu* form one big cell with a "spur," sometimes two or three cells, but the number of the simple veins is never so elevated as in Phymatinæ. The hind wings in Phymatidæ have a big cell formed by *R* and *Cu,* more or less separated by a "hamus," the interrupted *M.* In Reduviidæ the venation of the hind wings is more variable in various subfamilies.

MORPHOLOGY [2]

Head in Phymatinæ very variable in shape, but generally vertical, more rarely produced forward. Generally, in the dorsal aspect, it is slightly longer than wide across the eyes, but can be of the same length or shorter; sometimes very long, frontal processes produced in a trunk (*Phymata riojana* Pennington), or beak (*P. mansosotoi* Kormilev), or take such a bizarre form *as in P. producta* Hoberlandt, in which it is almost four times longer than wide across the eyes. Dorsal surface normally more or less plane, separated by two transversal furrows into three parts: the anterior, or the "frontal plate," formed by two (1 + 1) more or less separated and elevated frontal processes (FP). (Plate 1, fig. 1)

Second part formed by two (1 + 1) small preocellar processes (POP), generally not elevated above level of frontal

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[2] Dr. Jacques Carayon, vice-director of the National Museum of Natural History in Paris, and Dr. Norman T. Davis of the University of Connecticut, Storrs, to whom I express once more my sincere gratitude, were so kind as to let me know and use for this revision the results of their independent and yet unpublished investigations on the internal organs of phymatidæ, which I make use of in treating "abdomen" and "internal organs."

plate, but sometimes (*P. fortificata* H.S.) can be erect, dentiform. Posterior part formed by ocellar processes (OP) and occiput, latter, generally denticulated on posterior border; ocellar processes tuberculiform or dentiform, more or less granulated, but rarely spiniform (*P. fortificata* H.S.) or forming a slender branch (*P. americana* Melin). Beneath ocellar processes situated ocelli (Oc), more or less visible from above. Dorsal surface laterally limited by the (1 + 1) more or less deep antennal excavations (AE), running from tip to hind border of the head. Eyes (O) are big, lateral in position, convex, protruding, but not pedunculate. Clypeus or tylus is vertical, forming anterior border of head. Jugæ are also vertical, each consisting of two lobes. Bucculæ form inferior borders of head, enclosing between themselves the deep rostral groove. open posteriorly. Antennæ are four-segmented; first segment (A1) is stout, subtriangular, laterally flat, vertical or subvertical in position; second and third (A2 and A3) are slender, subcylindrical, very variable in length, but the ratio between second and third together, and fourth is more constant, and used in the taxonomy; fourth (A4) is stout, fusiform or cylindrical, sometimes much longer than second and third together; it shows the sexual dimorphismus, being in the male longer, sometimes considerably longer than in female. Some species, belonging to different genera, subgenera or groups, have the fourth segment of males very elongated, cylindrical, twice or three times longer than second and third together, but it was impossible to unite these species in a separate systematical group, the females of these species having the fourth segment much shorter and fusiform. Rostrum with three visible segments, of which first and second (visible) are stout and subequal in width, third is much more slender. Genus *Paraphymata* with second (visible) segment distinctly more slender than first, but stouter than third (Fig. 352). Rostrum reaching middle of prosternal stridulatory groove. Generally used for taxonomical purposes are frontal processes, ocellar processes, ratio between antennal segments (2 + 3:4), and, less so, preocellar processes.

Pronotum is generally trapezoidal, divided into two lobes; fore lobe is more or less declivous, hind lobe forming highest point of pronotum (top), more anteriorly, and less posteriorly, declivous in the insect at rest. Fore border is more or less sinuated; before it, somewhat lower level, a collar can be seen, also sinuated, and generally heavily granulated, the fore-border form laterally two (1 + 1) anterior angles (ANA), more or less acute and protruding forwards, rarely sideways, sometimes dentiform (*P. fortificata* H.S.). Lateral borders of pronotum can be divided into two parts: antero- and postero-lateral, forming together the lateral projections or lateral angles of the pronotum (LAP); each of these parts can be subdivided also into two parts, so that we have: antero-lateral-anterior borders (ALA), which run from anterior angles to lateral notch (LN); antero-lateral-posterior borders (ALP), which run from lateral notch to lateral angles; postero-lateral-anterior borders (PLA), which run from lateral angles to posterior angles (PAP); angular or dentiform processes in the middle of postero-lateral borders; and postero-lateral-posterior borders (PLP), which run from the posterior angles to posterior processes (PP), small curved processes, situated laterad of scutellum, and inclosing between themselves the posterior border. The shape of ALA-, ALP-, and PLA-borders, lateral angles, and lateral notch is much used in the taxonomy; of the anterior and posterior angles less so, and of PLP-borders, posterior processes and posterior border very rarely, because they are similar in the majority of the species. Fore lobe has in the middle a trapezoidal space, limited anteriorly and laterally by furrows, and abruptly dropped posteriorly downwards; so-called fore disk (FD); from this disk run backwards two (1 + 1), generally divergent, carinæ of posterior lobe (CP). Fore disk can be granulated, or covered with lying or erect spiculæ, rarely scabrous, but without granulation, or smooth. Carinæ on the top can be inflated, forming a ridge, or provided with tubercle. Posterior lobe, or disk is generally convex, three times longitudinally depressed: on the median line, median depression (MD), and mesad of lateral angles. Hind disk is generally more or less deeply punctated, and with more or less sparse granulation.

Scutellum is small, triangular; outer borders generally rimmed, and provided with small teeth, more dense towards the tip of the scutellum; disk is more or less inflated and provided with more or less prominent median carina (MC); latter can be linear or cruciform, but these two types are not sharply delimited, all transitions existing between them. The shape of the medium carina is used for the separation of the species of the genus *Phymata* Latr. s. str. into two big groups, with the linear, and with the cruciform median carina. In *P. distanti* Handlirsch the median carina is practically absent.

Hemelytra always have corium, clavus and membrane, the latter can have the venation simple or anastomosed, transitions existing between both types. Hemelytra generally reach the hind border of abdomen, but sometimes fall slightly short or long.

Hind wings are shorter and narrower; veins *R* and *Cu* forming a big cell, more or less cut into two by a "hamus," the interrupted *M*.

Abdomen is generally rhomboidal, (Plate 1, fig. 2) angularly protruding sidewards, but sometimes with rounded lateral borders, or is roundly abbreviated posteriorly (*P. saopauloensis* Hoberlandt and *P. husseyi* Kormilev, respectively). As the intersegmental membranes are not developed, the connexivum is always well developed; for practical use, as tergum I without connexivum, connexiva are counted as they are visible: connexivum I (CI) corresponding to tergum II, connexivum II to tergum III, and other characters. Sometimes connexivum IV (CIV) is enormously developed, and on ventral side its exterior portion is separated by a fine carina, external portion can be named ultraconnexivum (UC), and used taxonomically. Postero-exterior angles of the connexiva (PE), particularly of the connexiva I, II, III and IV, protrude more or less in the form of an angle or a tooth, and also are used in the taxonomy. PE-angles of the fourth segment (visible) are generally more protruding. PE-angles are numbered Pel, Pe2, Pe3, Pe4, etc. Tergum I is fused with tergum II, but can be distinguished, because it is slightly elevated and bears two (1 + 1) spiracles (SP), all other tergites being without them. In males the genital urites, the eighth and ninth, are displaced on the ventral surface of the abdomen (venter) (Plate 1, fig. 3); eighth is short, deeply immersed in the sternum VII, chitinized only on its ventral part, sternum VIII; ninth urite is much bigger and envelops the external genitalia (phallus), its upper part is also membranous, and ventral, sternum IX, chitinized, forming a cup, pygophore, which covers genitalia at rest. In females the last tergum on dorsal surface is VIII, which is flexed ventrad (Plate 1, fig. 4); tergum IX, in the form of an elongated triangle, is completely ventral, eighth and ninth sternites not existing (Plate 1, fig. 5). Between fourth and fifth, and fifth and sixth tergites, respectively, can be seen openings of former stink-glands of nymphal period (Fig. 2). First sternite in both sexes is absent, so that first visible belongs to second urite; all sternites from second to seventh bear spiracles, which are placed far from lateral border, interiorly to connexivum (Fig. 3). Venter is generally protruding on median line in the form of a roof, more so in females. Eighth sternite of males, at rest, can be seen only as a thin border, anterior to cup-shaped ninth. In females, laterally to median ninth tergite, are situated two (1 + 1) elongated sclerites—first valvifers or gonocoxopodites of Davis (VFI), or gonocoxites of eighth urite of Dupuis (Plate 1, fig. 5). Anteriorly to the ninth tergite can be seen two (1 + 1) small sclerites—third valves of Davis, or gonapophyses of ninth urite of Dupuis. According to Davis, second valvifers (second gonocoxopodites), or gonocoxites of ninth urite of Dupuis, are greatly reduced in Reduvioids, inclusively Phymatinae. In Phymatinae only third valves are present (VIv3), whereas in Macrocephalinæ second and third. First valves in Phymatinæ, according to Davis, probably represented by two (1 + 1) small lobes, extending mesally to first valvifers. Lateral borders of abdomen can be divided into two parts: from base of abdomen to lateral angles, which we will name anterolateral borders (AL), and from lateral angles to tip of abdomen which we will name posterolateral borders (PL). Posterior border, which is rounded or subtruncated, is too variable for taxonomical use. In *Anthylla* Stål it is sinuated in both sexes, and in *Phymata* (*Euryphymata*) *superba* it is cut out in the middle, and lobularly produced laterally to the cut. Lateral angles (LAA) are generally angulated, rarely rounded.

According to Carayon, alimentary canal, salivary glands, and nervous system are similar to those of Reduvioids. The reproductive organs, though also being of Reduvioid type, show some differences.

Male organs.—According to Carayon, the folliculæ of testis are short and fused together, their number is less than seven, probably 5 to 6. Accessory glands are three, one smaller and two bigger (Figs. 8 and 370), opening into "canal efferent" (vasa aferentia), or accessory glands duct of Davis (AGD), these and "canal deferent" (vasa deferentia-VD) open into a simple "carrefour genital," genital crossroads, not differentiated externally as ejaculatory bulb. Each "canal deferent" is distinctly inflated in the middle forming an elongated vesicula seminis. Ejaculatory duct is very short and terminates in penis (phallus). With the exception of the reduced number of folliculæ of testis, the male reproductive organs are typically reduviod.

According to Davis, the phallus of Phymatinæ differs from Reduviidæ and Macrocephalinæ by the absence of evertible (Plate 1, fig. 2) portion (ædeagus). The gonopore simply opens at the phallobase. Basal ampulæ of Carayon, present in Reduviidæ, absent in Phymatinæ, instead there is present a muscular bulb (MB).

Basal plates of Singh Pruthi are very developed in Phymatinæ, as in Reduviidæ, curved in the form of a bridge, through which the ejaculatory duct penetrates into the phallus (Plate 2, fig. 13). These basal plates united anteriorly with basal plate median extension of China and Usinger [(1948) 600, fig. 2], or rodlike basal plate extension of China, Usinger, and Villiers [(1950) 343], which in their turn, produced into basal plate struts of China, Usinger, and Villiers. Basal plate struts generally more slender and less chitinized than the former, but sometimes can be very stout and curved apically as a hook (*Phymata Neophymata bosqui* Kormilev) (Plate 2, fig. 13), or thin and divergent (*Phymata Phymatispa fortificata* H. Sch.) (Plate 3, figs. 21 and 22). On the apex of each basal plate strut is attached an appendix, generally slender and short, sometimes hardly noticeable (Plate 3, fig. 24). The shape of basal plates, rodlike basal plate extensions, and basal plate struts can be used in taxonomy above the specifical level, but does not help much in the allied species or subspecies.

Female organs.—Female organs are more distinct from those of Reduviidæ (Plate 2, fig. 10 and Plate 19, fig. 371). According to Carayon, in *Phymata* each ovarium has only three ovarioles whereas Reduviidæ have generally seven. Another peculiarity of *Phymata* is that the oviduct just below the calices is glandularly inflate. The remaining characters are as in Reduviidæ. The odd, long and tubular spermatheca (SP), inserted dorsally in the vagina is not functional, but transformed into an accessory gland (according to Davis, it probably functions only as an egg-cement gland); its normal functions are performed by two (1 + 1) pseudospermathecæ, (PSP), in the form of tubular sacks, inserted at fore end of genital chamber (vagina), laterally to common oviduct (Plate 2, fig. 10). According to Carayon, spermatozoa can remain up to six months [(1954) 191]. According to Davis, in *Macrocephalus* the pseudospermathecæ, or "seminal depositories," are much longer than in *Phymata*, and coiled.

Pleuræ are unequally developed (Plate 16, fig. 353). Propleuræ are the biggest, and provided with a more or less long and deep antennal excavation (AEP); their anterior border is generally granulated and denticulated inferiorly, rarely denticulated from top to base; mesopleuræ smaller, and metapleuræ smallest. Only propleuræ give better taxonomical characters: antennal excavation (AEP) and fore border (ASP). Acetabula are big, but those of the forelegs are fused with propleuron, and mostly difficult to separate from the latter.

Prosternum longitudinally excavated, forming a big, deep, finely striated transversally, stridulatory groove (Plate 1, fig. 6); counterpart of stridulatory mechanism is the tip of rostrum. Mesosternum is the biggest part of the sternum, and is occupied by a high, more or less convex, granulated median ridge, crossed posteriorly with a fine, naked, transversal carina, bifurcated at each end. This median ridge, or mesosternal cross ["la cruz del mesosterno" Mihi (1951) 54], is used taxonomically above the specific level. Laterally to fore branch of mesosternal cross, mesosternum shallowly excavated, for reception at rest of forecoxæ. Metasternum is much smaller, inflated and provided with metasternal star, formed by median carina, somewhat higher and granulated, and four (2 + 2) divergent, but basally fused, lateral carinæ, which are lower and without granulation.

Legs.—Forelegs are raptorial, of "Mantis"-type (Plate 16, figs. 341, 345, and 353). Coxæ stout, long, subcylindrical, and with globose "head," inserted in deep excavation of fore acetabulum, which permits liberty of movement (Plate 1, fig. 6). Trochanter robust, but not very big. Femura very big, subtriangular, more or less inflated on the outer surface, and concave on inner surface, provided on their upper border with a setigerous "comb," formed by more or less big granulæ (UEF); at fore end of femur inserted sickle-shaped tibia; antero-inferior border of femur and inner border of tibia are very finely denticulated, and each provided with six or seven long setæ; outer disk of femur sometimes granulated, or strewed with fine spiculæ. On fore-border of tibia situated a small, elongated excavation for the reception at rest of small, two-segmented tarsi. Sometimes fore-femora elongately-ovate, externally completely flat, smooth and shiny (*Neoanthylla* Kormilev) (Plate 16, fig. 341), or relatively much smaller, in the form of a parallelogram, constricted in the middle (*Paraphymata* gen. nov.) (Plate 16, fig. 353). Middle and hind legs normal, cursorious; femora fusiform, on upper and inferior surfaces with more or less developed granulæ or teeth. Middle and hind tibiæ slender, their upper surface can be flat, carinated laterally (with fine rims), as in genera *Phymata* Latr. and *Paraphymata* gen. nov., or convex, rounded, as in genera *Anthylla* Stål and *Neoanthylla* Kormilev. Tarsi small, two-segmented, first joint very small and short, second much bigger, provided with two unguicula.

Pregnant females have from three to six big eggs; eggs ovate slightly depressed on one side, and obliquely truncated at one end. Auticula dark reddish brown, with dense hexagonal punctation of honeycomb pattern. This punctation is identical in various species.

Nymphs of various species are, in general, similar between themselves and difficult to identify, slightly more differentiated are the nymphs of *P. fortificata* H. Sch., particularly the spines on head, and lateral notch of pronotum more developed. In the third instar nymphs the first tergite is already fused with the second, but can be distinguished by the presence of spiracles; in fifth instar the tergites third to seventh distinctly separated from each other, eighth fused with ninth on ventral surface the sternites second to ninth and round anus better separated between themselves than tergites. Antennal excavation of head less deep than in adults, but that of propleuron scarcely discernible.

ECOLOGY

Phymatidæ are predaceous, insectivorous animals, feeding on various bees, flies, caterpillars, butterflies, aphids, and other insects, for which they lie in ambush in the flowers or below the leaves of different plants, mostly Umbelliferæ and Compositæ, but they were also found on citrus, and other plants. As enemies of the bees, they can cause a certain damage to apiarists, but they are useful for the farmers by capturing and killing numerous pernicious insects. They are not gregarious, and are seldom found in great number; many species are known as single specimens.

GENERAL REMARKS

During this revision we were confronted with several difficult problems concerning some doubtful species, or the application of names.

The first species of the genus *Phymata* Latr. was described by Linnæus and named *Cimex erosus* [(1758) 443]. In the collection of Linnæus in the British Museum (N.H.) the type of this species is not to be found. The first naturalists, who dealt with *Phymata,* have attributed almost all American species to *P. erosa* (L.). Handlirsch was not sure to which of his numerous subspecies of *P. erosa* the species of Linnæus belongs, and attributed it to three: *parva, communis,* and *linnei,* with a querry mark to all three [(1897) 165, 169, and 170]. Melin has considered that the type of Linnæus is lost, and identification of his species not possible, so he took the next author who dealt with *Phymata* De Geer, and constructed an impossible combination, *Phymata erosa* De Geer [(1930) 4]. This could not be accepted, because De Geer has named his species *Cimex scorpio,* though the name of Linnæus was put into synonymy of his species. Not knowing if these two species were really identical, and admitting with Melin, that the type of Linnæus was lost, I have rectified the names as *Phymata scorpio* De Geer [(1951) 167]. In the year 1953, Dr. Rene Malaise, of the Natural History Museum in Stockholm, drew my attention to the paper of Dr. Frej Ossiannilsson, Uppsala, on the identity of the type of *Phymata scorpio* (De Geer) (1773) with the type of *Phymata erosa* (L.) (1758). At my request, Doctor Ossiannilsson kindly sent me his paper and the following explanation:

> The examinations on which I based the paper in question were made on the request of Mr. Felix Bryk, the Lepidopterologist and Linneologist. The reasons why the specimens in the De Geer collection must be held to be types of Linnæus have been accounted for by Mr. Bryk in his "De Geers Insektensammlung eine Fundgrube von unbekannten Linneschen typen" [Opus. Ent. 14 (1949) 77–80]. In the case of *Phymata erosa,* this species was collected by Rolander. It is known that Rolander sold his collection to De Geer, who was a rich man. In the cases where specimens collected by Rolander are now present in the collection of Linnæus in London, Linnæus had probably got them from De Geer. In the present case, as in many other cases, no specimen is present in the London collection (teste Jackson: Catalogue of the Linnean Specimens). This is doubtless due to the fact that De Geer had only one single specimen in his collection, and it is natural that he preferred to keep it for himself. But as Linnæus and De Geer were friends and practically neighbours, the

former was certainly allowed to describe the specimens of De Geer in his works. Therefore, specimens preserved in the De Geer collection and collected by Rolander must certainly be considered as types of Linnæus, if he described them and no specimen is present in his collection in London. In the De Geer collection, the names of Linnæus are written on the labels with those of De Geer. That De Geer himself often gave his species other names than those of Linnæus is of no importance, as De Geer's views on nomenclature were certainly not those accepted by later works.

I think that the reasons exposed in the letter of Dr. Ossiannilsson can be accepted, and consequently the species in question should have the linnean name: *Phymata erosa* (L.) (1758), whereas *P. scorpio* (De Geer) (1773) should be held for its synonym.

I am greatly indebted to Dr. René Malaise and Dr. Frej Ossiannilsson for help in solving this important problem.

The second problem, which we had to solve, but could not, is *Phymata carinata* (F.) (1803). The description of Fabricius [(1803) 122] does not permit an exact identification. The redescription of Stål [(1868) 93], though much better, is not enough for introducing it in the key. Where the type of Fabricius, seen by Stål, was probably destroyed. I could not see any specimen of *Phymata* from Guiana or the northern part of South America (the type of Fabricius was from Surinam), which I could identify with this species. Handlirsch has identified *P. carinata* (F.) from Surinam, which he has not seen, with *P. carinata* Spinola from Chile, asserting that Stål identified some specimens from Chile as *P. carinata* (F.). Stål was an extraordinary taxonomist, but in Phymatinæ, as many other authors, he had no luck. I have seen these specimens identified by Stål, as *P. carinata* Spinola, but that does not imply that they are *P. carinata* (F.). For *P. carinata* Spinola I propose the name given by the next author, *P. chilensis* Handlirsch, because the name of Spinola is preoccupied by the name of Fabricius, and in all probability they are not identical. *P. chilensis* Handlirsch is a big superspecies or "cline," with an enormous area of distribution from Chile, across Central Argentina, Uruguay and Paraguay, to Southeast Brazil. With all its variability, it shows some constant characters, among them the head distinctly longer than wide across the eyes, and the frontal processes distinctly longer than the tip of the first antennal point. Stål in the redescription of *P. carinata* (F.) [(1868) 93] says: "*P. erosa* valde affinis, processu apicali capitis multo breviore, apicen articuli primi antennarum vix acquanto, apice angustato, apice imo leviter emarginato . . . ." This clearly contradicts the above mentioned characters of the "chilensis group." *P. chilensis* Handl. from Chile and *P. chilensis monrosi* Kormilev, from Northwest Argentina, have the frontal processes obtuse, but always longer than the tip of the first antennal joint in the subspecies distributed in Uruguay, northeast Argentina, Paraguay and Brazil. They are mostly pointed and always much longer, so that we can suppose, that if *P. carinata* (F.) was cospecific with *P. chilensis* Handl., it should have these processes, if not pointed, certainly much longer than the tip of the first antennal joint. According to Handlirsch, Stål did not compare *P. carinata* with *P. erosa* (L.), but with some North-American species considered by him wrongly as *erosa,* but with a much longer head. We cannot accept this. Firstly, Handlirsch himself was not sure what *P. erosa* (L.) is. Secondly, Stål saw the type of *P. scorpio* (De Geer), which he considered identical with *P. erosa* L. [(1876) 133]. Thirdly, Stål states very clearly: "processu apicali capitis . . . apicem articuli primi antennarum vix aequante . . . ."

In my "Notas sobre Phymatidæ Neotropicales II" [(1951] 176], I have mentioned two specimens (♂ & ♀) from Pará, Brazil, as *P. carinata* (F.), with a question mark. Later I came to the conclusion that they belong to a North American species, *P. pennsylvanica* Handlirsch.

The third problem confronted was the identity of *P. fasciata* (Gray) (1832). As Dr. R. J. Izzard, of the British Museum (Natural History) has informed me, the type of Gray cannot be located either in the British Museum or Oxford, and should be held for lost. This species was described from North America. The description itself is not of much value [(1832) 242], but it is supported by a drawing (Plate 93, fig. 3), and this drawing, in spite of its imperfection, can be attributed only to one North American species, *P. fasciata georgiensis* Melin (1930). The indication of coloration as "light brown, with broad band across the middle of the abdomen; the last joint of antennæ and the wings are dark brown" only corroborates this assumption. Stål has not mentioned this species in Emueratio Phymatidarum [(1876) 131], the same name gave to another South American species, *P. communis* Handlirsch. Handlirsch has united by the name *P. erosa* ssp. *fasciata* at least two species: *P. fasciata* (Gray) and another, later described by Melin as

P. americana. His drawing Plate 5, fig. 8, represents *americana* and not *fasciata.* Melin has subdivided *P. fasciata* (Gray) into two subspecies: *P. fasciata georgiensis* Melin and *P. fasciata mexicana* Melin with no indication as to which corresponds *P. fasciata* (Gray) s. str. Evans has selected, without explanation, *P. fasciata mexicana* Melin as a typical subspecies, notwithstanding that Gray has clearly indicated the locality: North America, and he surely would not name Mexico "North America," which name always has meant United States of America. Then, drawing of Gray shows distinctly that the postero-exterior angles of the connexiva are very protruding, dentiform, a character of *georgiensis* and not of *mexicana.* Lastly, Melin has described first *georgiensis* [(1930) 9, fig. 12], and then *mexicana* [(1930) 10, fig. 13]. So I propose to take as typical subspecies *P. fasciata georgiensis* Melin, which should be named *P. fasciata fasciata* (Gray), and *mexicana* as its subspecies. Also *P. mystica* Evans (1931) is only a subspecies of *fasciata.*

The last problem to be confronted was *Phymata wolffi* Stål (1876). Stål has created this species for the reception of *Phymata erosa* Wolff (1802) nec Linnæus (1758) but from beginning it was a mixed species. Stål gives no description for this species, but only indicates: "*P. wolffi* Stål—*Acanthia erosa* Wolff 3 (1802) 89, fig. 83; *Phymata erosa* A. S., Hem. (1843) 290, 292. Patria: America borealis, Wisconsin, New York, Carolina, Texas, Mexico." [(1876) 133]

Handlirsch asserts that *P. wolffi* is a mixture of at least three subspecies of *erosa: P. fasciata* Gray, P. *pennsylvanica* Handlirsch, and *P. granulosa* Handlirsch (three different species and not subspecies *erosa*). He says. . . "Ståls' *Ph. Wolffi* nach den Typen ein Gemisch von *fasciata* Gray, *pennsylvanica* m. und *granulosa* m." [(1897) 163], "Wolff's *Ac. erosa* bezieht sich entweder auf *fasciata* Gray oder *pennsylvanica* m. . . . Stål hat unter *Ph. Wolffi fasciata* Gr., *pennsylvanica* m. und *granulosa* m. zusammengefasst" [(1897) 163], and "Wie schon erwahnt, hat Stål ausser den zwei vorhergehenden Formen auch Exemplare von *granulosa* m. als *P. Wolffi* bestimmt."

Perhaps Stål has erroneously identified various species as *P. Wolffi* Stål, but as he indicated that *P. wolffi* Stål is *Acanthia erosa* Wolff, we should see, if the latter can be fixed. Wolff gives a relatively long and, for his time, good description of his *erosa* (nec Linnæus), accompanied with two drawings: one in the natural size, and another magnified. From the latter drawing it is clear enough that this species is *P. fasciata* (Gray) (1832). Though the pronotum in rather badly represented, the abdomen has characteristic, protruding postero-exterior angles of the connexiva, and the coloration corresponds to two North American species only: *P. fasciata* (Gray) and *P. pennsylvanica* Handlirsch, but as the latter has no protruding postero-exterior angles of the connexiva, the species of Wolff should be identical with *P. fasciata* (Gray).

Handlirsch has not selected the holo- and allotypes, but made cotypes of all specimens which he considered as new species or subspecies. He has often mixed various species in the same subspecies. In order to clear this situation, and to fix in the future his species or subspecies, I selected the lectotypes whenever I could examine some of his cotypes, and also the allolectotypes if any specimen of the opposite sex was available.

As the type of *Phymata fasciata* (Gray) (1832) cannot be found and must be considered as lost, I have selected a neotype, the type-specimen of *Phymata fasciata georgiensis* Melin, the latter being the synonym of the former. This neotype is deposited in the Natural History Museum in Stockholm.

In order to facilitate the identification of the numerous species and subspecies of the genus *Phymata* Latreille, and to make easy the comparison with one another, I have introduced abbreviations for more frequent characters, expressed in a combination of letters, as follows:

ALA–borders, antero-lateral–anterior borders of pronotum.
ALP–borders, antero–lateral–posterior borders of pronotum.
PLA–borders, postero–lateral–anterior borders of pronotum.
PLP–borders, postero–lateral–posterior borders of pronotum.
Carinæ, carinæ of hind lobe of pronotum.
AL–borders, antero-lateral borders of abdomen.
PE–angles, postero–exterior angles of first to third connexiva together.
Pe1, Pe2 Pe3, Pe4, etc., postero-exterior angles of connexiva first, second, third, fourth, etc., respectively.
PL–borders, postero-lateral borders of abdomen.
AEP, antenal excavation of propleuræ.
MM-pleuræ, meso- and meta-pleuræ together.
UBF, upper border of fore-femora.

If not otherwise indicated, then it is supposed that postero-lateral-posterior borders of pronotum (PLP) straight, at the interior end somewhat curved, sinuated; that posterior processes small, slightly convergent; that posterior border of pronotum slightly sinuated; that lateral borders of scutellum denticulated before apex.

Descriptions were made, with the aid of a stereoscopic microscope with 16x or 29x for smaller species, rarely more and only when necessary. Measures were taken with a micrometric eyepiece; they are given as relative figures. Only total length of body, width of pronotum and of abdomen were calculated in millimeters. Total length was taken as a vertical projection on body, from tip of frontal processes to tip of abdomen; width of pronotum (maximal) was taken either between lateral or posterior angles, depending on which were wider; length of pronotum was taken as maximal obtainable length on median line, that is body was inclined backwards to obtain it; width of abdomen sometimes very variable for the same species, depending whether lateral angles are more or less raised, and it is not possible in this case to obtain actual width, but only distance between lateral angles; length of abdomen was taken conventionally from tip of scutellum to tip of abdomen.

SYSTEMATIC

Family PHYMATIDÆ (Laporte), 1832

Phymatides LAPORTE, Essai Class. Syst. Hém. (1832) 14.
Syrtides RAMBUR, Faune d'Andal. (1842) 167.
Spissipedes AMYOT & SERVILLE, Hist. Nat. Ins., Hém. (1843) 228.
Phymatidæ STÅL, Enum. Hem. 5 (1876) 131.
Macrocephalidæ KIRKALDY, Entom. 32 (1899) 221.

Phymatidæ forms three subfamilies: Phymatinæ, Macrocephalinæ and Carcinocorinæ, which can be separated as follows:

1. Forelegs of the "Mantis" type 2
   Forelegs of the "Cancer" type .... Carcinocorinæ Handlirsch
2. Antennæ at rest bending sideways and concealed in lateral excavations of heading and propleuræ .... Phymatinæ Amyot & Serville
   Antennæ at rest bending downwards and lay to each side of rostrum .... Macrocephalinæ Amyot & Serville

As I have said, in this paper only Phymatinæ are treated.

Subfamily PHYMATINÆ (Amyot & Serville), 1843

Phymatinæ now have four genera, which can be separated as follows:

1. Median and hind tibiæ flattened on the upper surface, and laterally with rims .... 2.
   Median and hind tibiæ convexly rounded on the upper surface, and laterally without rims .... 3.
2. Second (visible) rostral segment as stout as first; fore-femora are big, subtriangular, constricted at base .... *Phymata* Latreille, 1802.
   Second (visible) rostral segment distinctly more slender than first;

fore-femora very small, in the form of an oblique parallelogram, constricted in middle .... *Paraphymata* gen. nov.

3. Fore-femora subtriangular, inflated, granulated on disk and constricted at base, upper border crenelated .... *Anthylla* Stål, 1876.
   Fore-femora elongately-ovate, exteriorly flat, naked, smooth and shiny, upper border not crenelated .... *Neoanthylla* Kormilev, 1951.

The genera *Anthylla* Stål and *Paraphymata* gen. nov. are monophyletic; *Neoanthylla* Kormilev has two closely allied species; *Phymata* Latreille is a distinctly polyphyletic genus, which we propose to divide into four subgenera, but later, with more abundant material, which will have more subgenera.

Anthylla Stål is a relict genus, endemic for Central Chile, where it is rather rare. *Neoanthylla* Kormilev, more allied to *Anthylla* Stål than other two genera, originally was established as subgenus of the genus *Phymata* Latr.; there are only three known specimens belonging to this genus, all females, the types of *Phymata horvathi* Handlirsch (1898) and *Phymata bucki* Kormilev (1951), respectively, and one specimen in the Museum of Munich, all collected in Brazil. The males are yet unknown. *Paraphymata* gen. nov. is known as a single specimen, male, from Haiti; notwithstanding the singular fore-femora and more slender second rostral segment, it is more allied to the genus *Phymata* Latreille, than *Anthylla* or *Neoanthylla*. *Phymata* Latreille is a flourishing genus with about ninety species and numerous geographical subspecies distributed on the whole area of the subfamily.

Genus I. PHYMATA Latreille, 1802

Phymata LATREILLE, Hist. Nat. Crust. Ins. 3 (1802) 247. (Haplotype: *P. crassipes* F.)

Syrtis FABRICIUS (in partem), Syst. Rhyng. (1803) 121. Orthotype: *P. erosa* L.).

Discomerus LAPORTE, Essai Class. Syst. Hém. (1832) 14. (Type: *P. erosa* L.).

The genus *Phymata* Latr., is divided into four subgenera, which can be separated as follows:

1. Parameres of males simple, with one point only .... 2.
   Parameres of males forked .... *Phymatispa* Kormilev, 1951.
2. Struts of phallus curved apically in a hook. *Neophymata* subgen. nov.
   Struts of phallus straight .... 3.
3. Basal plates and struts of phallus very stout; posterior border of abdomen deeply notched, bilobated .... *Euryphymata* subgen. nov.
   Basal plates and struts more slender; the posterior border of abdomen without notch .... *Phymata* Latreille s. str.

Subgenus PHYMATA Latreille s. str.

The subgenus *Phymata* Latreille s. str. contains the great majority of the species of the genus, forming various "groups" and "superspecies." Its species and subspecies can be separated by the following key:

1. Scutellum with carina completely obliterated; pronotum very wide, winglike elevated laterally; carinæ of pronotum and posterior processes of the same almost absent.
1. *distanti* Handlirsch, 1897 (Jamaica).
Scutellum with carina always present, linear or cruciform .... 2.
2. Scutellum with linear or sublinear carina; lateral branches of cross generally absent, rarely present, but obsolete and without granulation .... 3.
Scutellm with cruciform or subcruciform carina; lateral branches of the cross always well developed, granulated or not .... 46.
3. Head four times as long as wide across eyes; frontal processes fused into very long trunk, truncated apically; pronotum without lateral notch, rectangularly protruding sideways.
2. *producta* Hoberlandt, 1944 (Brazil).
Head much shorter, at most two times as long as wide across eyes .... 4.
4. Head with frontal processes fused together into a pointed beak .... 5.
Head never terminated with a beak .... 6.
5. Head with frontal processes forming a long, regularly tapering, and beak pointed apically, directed forwards.
3. *oxycephala* Dudich, 1922 (Peru).
Head somewhat shorter, fused frontal processes forming a plate, basally parallel abruptly pointed apically and directed downwards .... 4. *mansosotoi* Kormilev, 1952 (Argentina).
6. Head with frontal processes fused into a long, rounded trunk, apically truncated or rounded, but not cut out .... 7.
Head with frontal processes forming a plate, flat or slightly concave on median line .... 8.
7. Head as long or slightly less long than pronotum; latter with lateral notch deep and rounded.
5. *riojana* Pennington, 1919 (Argentina)
Head distinctly shorter than pronotum; latter slightly sinuated laterally, almost without lateral notch.
6. *carvalhoi* Kormilev, 1950 (Brazil).
8. Body, particularly head, pronoutm, and scutellum, covered with fine, dense, erect spiculæ; lateral borders of pronotum and abdomen provided, besides spiculæ, also with fine and long teeth, intermittent with former .... 9.
Body without fine spiculæ; if they are present, they are more robust, and lateral borders of pronotum and abdomen without teeth .... 13.
9. Head with frontal processes fused in a plate, rounded anteriorly and without notch; pronotum with lateral notch small, but present
10.

Head distinctly notched anteriorly; pronotum without lateral notch .... 11.

10. Body covered with dense setigerous spiculæ; abdomen with antero-lateral border slightly sinuated; membrane hyaline.
7. *spinosissima* Mayr, 1865 (Brazil).

Body with spiculæ restricted only to fore half, and without setæ; abdomen with antero-lateral borders distinctly sinuated; membrane opaque .... 8. *beieri* sp. nov. (Bolivia).

11. Pronotum and abdomen with lateral angles widely rounded, not angulated .... 9. *saopauloensis* Hoberlandt, 1944 (Brazil).

Pronotum and abdomen with lateral angles always angulated .... 12.

12. Abdomen narrow, with lateral angles obtuse, though its apex acute.
10. *scabrosa* Handlirsch, 1897 (Brazil, Venezuela, Paraguay, Argentina).

Abdomen is very wide, forming various points; apex of lateral angles forms two points.
11. *phyllomorpha* Handlirsch, 1897 (Brazil).

13. Head longer, at least one and a half times longer than wide across eyes; pronotum with lateral angles angulated and often produced as a tooth .... 14.

Head shorter, sometimes very short; if it is elongated, more than 1.5 times longer than wide, then pronotum with lateral angles lobulated, and directed up and forwards, more or less notched anteriorly .... 22.

14. Pronotum without lateral notch, antero-lateral-anterior and antero-lateral-posterior borders forming together a straight line .... 15.

Pronotum with lateral notch present, though sometimes slightly distinct .... 16.

15. Body longer and narrower; head as long, or almost as long as pronotum; abdomen longer than wide (♂), or as long as wide (♀) .... 12. *peruensis* Melin, 1930 (Perú).

Body shorter and wider; head distinctly shorter than pronotum; abdomen in both sexes less long than wide.
13. *acuta* Stål, 1860 (Brazil, Bolivia).

16. Head, pronotum, scutellum, and sometimes hemelytra are strewn with a fine, dense, rounded granulation generally lighter than background, and therefore very conspicuous .... 17.

Body less granulated; latter less conspicuous .... 18.

17. Head with frontal processes directed forwards; pronotum with lateral and posterior angles angulated, but not dentiform; abdomen with postero-exterior angles of connexiva scarcely protruding .... 14. *longiceps* Stål, 1860 (Brazil).

Head with frontal processes upturned at tip; pronotum with lateral and posterior angles dentiform; postero-exterior angles of connexiva distinctly protruding .... 15. *roqueensis* Melin, 1930

a. Pronotum with lateral notch more cut out, forming an obtuse angle; antero-lateral borders of abdomen slightly sinuated; lateral angles of latter forming an obtuse angle, though its apex acute and protruding.
roqueensis Melin s. str. (Perú).

Pronotum with lateral notch scarcely distinct, slightly sinuated, or almost absent; antero-lateral borders of abdomen in both sexes deeply sinuated and lateral angles forming an acute angle .... *roqueensis halazzfyi* ssp. (Peru).

18. Pronotum with lateral notch scarcely distinct, slightly sinuated; antero-lateral-anterior and antero-lateral-posterior borders forming together almost a straight line; lateral angles forming an obtuse angle lying almost horizontally; maximal width across posterior angles; abdomen more elongated.
16. *vianai* Kormilev, 1950 (Argentina).

Pronotum with lateral notch generally well marked; lateral angles of the same at least slightly elevated, often produced in an acute tooth; maximal width of pronotum across lateral angles; abdomen more projected laterally .... 19.

19. Pronotum with antero-lateral-anterior borders angulated or subangulated .... 17. *simulans* Stål, 1860.

a. Head with frontal processes blunt and scarcely notch at tip; abdomen more elongated; its hind half more protruding .... *simulans* Stål s. str. (Brazil).

Head with frontal processes distinctly notched at tip; abdomen more transverse, hind half more or less abbreviated .... b.

b. Head with frontal processes obtuse and moderately notched; abdomen less transverse, ratio between length and width from 5:6 till 5:6.5.
simulans explanata **ssp. nov. (Argentina, Brazil, Paraguay).**

Head with frontal processes acute and deeply notched; abdomen more projecting laterally, ratio between length and width from 5:7 till 3:8 .... c.

c. Bigger (6.5 mm); pronotum with antero-lateral-anterior and antero-lateral-posterior borders finely granulated; abdomen with exterior border of fourth connexivum distinctly convex.
simulans surinamensis ssp. nov. (Guiana).

Smaller (5.5 to 6 mm); pronotum with antero-lateral-anterior and antero-lateral-posterior borders finely denticulated; abdomen with exterior border of fourth connexivum scarcely convex .... *simulans recifensis* ssp. nov. (Brazil).

Pronotum with antero-lateral-anterior borders rounded .... 20.

20. Smaller (5.7 to 6.5 mm); head with frontal processes slightly notched and always divergent.
18. *lindigiana* Melin, 1930 (Colombia, Venezuela, Costa Rica).

Bigger (7 to 7.7 mm); head with frontal processes scarcely notched and directed forwards .... 21.

21. Abdomen with lateral angles forming an acute (♂) or right (♀) angle; tip of fourth connexivum only slightly protruding, obtuse apically; body yellow with transverse band of abdomen testaceous .... 19. *ampliata* sp. nov. (Brazil, Paraguay).

Abdomen with the lateral angles acute in females; tip of fourth

connexivum acute and protruding; body yellow, but head, pronotum posteriorly, and transverse band of abdomen black (♀).
20. *centralis* sp. nov. (Panama).

22. Pronotum with lateral notch absent, antero-lateral-anterior and antero-lateral-posterior borders forming together a continuous line, straight or sinuated; species moderate in size (6 to 7 mm).... 23.
Pronotum with lateral notch present, though sometimes it is very small, almost absent; if it is absent, then this is a very big species (10 to 12 mm) and its antero-lateral-anterior and antero-lateral-posterior borders forming together a line convex anteriorly and sinuated posteriorly .... 24.

23. Pronotum with antero-lateral-anterior and antero-lateral-posterior borders forming together a straight line; hind part of abdomen (back of lateral angles) abbreviated, forming a wide arch.
21. *husseyi* Kormilev, 1951 (Paraguay).
Pronotum with antero-lateral-anterior and antero-lateral posterior borders forming together a slightly sinuated line; hind part of abdomen not abbreviated .... 22. *swederi* Stål, 1860 (Brazil).

24. Pronotum with antero-lateral-anterior and antero-lateral-posterior borders forming together a line, convex anteriorly and sinuated posteriorly, lateral notch absent; lateral angles rudimentary, scarcely marked as a change of level; maximal width of pronotum across posterior angles; big species (10 to 12 mm).
23. *integra* Westwood, 1843 (Brazil).
Pronotum with lateral notch more or less marked; smaller species (less than 10 mm) .... 25.

25. Abdomen with the fourth connexivum without an ultraconnexivum, never forming various lobes or teeth .... 34.
Fourth connexivum provided exteriorly with an ultraconnexivum, generally very much developed and lobulated .... 26.

26. Fourth connexium forms three lobes, though third sometimes very small and inconspicuous .... 27.
Fourth connexivum forms at most two lobes or teeth .... 29.

27. Fourth connexivum bearing anteriorly two small, and one big lobe posteriorly, latter directed slightly backwards; membrane completely anastomosed .... 24. *reticulata* Handlirsch, 1897 (Colombia).
Fourth connexivum is more protruding in middle than posteriorly, second lobe is longest; membrane only partially anastomosed .. 28.

28. Lateral angles of pronotum very obtuse, almost rounded, granulation of body is strong, the granulæ big and rounded, shiny, sometimes fused together, similar to drops of ivory; membrane slightly anastomosed .... 25. *annulipes* Stål, 1862 (Mexico).
Lateral angles of pronotum angulated, acute; granulation of body less strong, and not like ivory drops; membrane anastomosed.
26. *venezuelana* Kormilev, 1950 (Venezuela).

29. Fourth connexivum bilobated; first lobe situated at middle of exterior border, latter dilated progressively .... 30.

Fourth connexivum simple, with one lobe only; if it has two lobes or teeth, then its exterior border abruptly dilated and fore-border transverse .... 34.

30. Hind lobe of fourth connexivum much longer than fore lobe, and directed out and slightly backwards.

27. *laciniata* Handlirsch, 1897 (Colombia).

Hind lobe of fourth connexivum subequal in length with fore lobe, both lobes are small .... 31.

31. Lateral notch of pronotum is less deep; postero-lateral-anterior borders less concave; fourth connexivum distinctly bilobated, and fifth also forming one lobe anteriorly; ultraconnexivum of fourth wide.

28. *nouahlieri* Handlirsch, 1897 (USA, Mexico, Guatemala).

Lateral notch of pronotum deeper; postero-lateral-anterior borders deeply sinuated; fourth connexivum forms two small lobes, one in middle and another at posterior angle; fifth without lobe; ultraconnexivum of fourth much narrower.

29. *handlirschi* Champion, 1898 (Panama).

32. Posterior angles of pronotum forming long teeth (maximal width of the same); fourth connexivum abruptly dilated and subbilobated.

30. *marginata* Fabr., 1803 (Puerto Rico, St. Thomas Islands).

Posterior angles of pronotum much smaller; if they are bigger, then membrane with anastomosed veins; fourth connexivum unilobated, not abruptly dilated .... 33.

33. Lateral angles of pronotum almost rounded, forming a subvertical "wings"; lateral notch is deep and narrow; membrane with simple veins; lateral angles of abdomen also almost rounded, and forming a subvertical "wing."

31. *emarginata* Guérin, 1857 (Cuba).

Lateral angles of pronotum angulated and slightly drawn out; lateral notch shallow; sometimes scarcely marked; membrane with anastomosed veins; lateral angles of abdomen angulated and subvertical exteriorly.

32. *albopicta* Handlirsch, 1897 (USA, Mexico, Guatemala).

34. Postero-lateral-anterior borders of pronotum deeply cut out; lateral angles forming long, acute lobes or spines; abdomen dilated laterally .... 35.

Lateral angles of pronotum different, never forming long, acute spines, at most terminated with small teeth; abdomen less dilated .... 37.

35. Lateral and posterior angles of pronotum forming long and acute lobes, subequal between themselves; abdomen dilated more regularly.

33. *angulata* Uhler, 1894 (Windward Isls., Grenada, St. Vincent).

Lateral angles of pronotum forming long and acute lobes or spines; posterior angles forming acute teeth, less long than lateral angles; abdomen abrubtly dilated and forming a more acute angle .... 36.

36. Lateral angles of pronotum forming long and acute spines; posterior angles forming smaller spines; lateral angles of abdomen forming a long and acute lobe, lateral borders of latter straight.
34. *acutangula* (Guérin, 1857 (Cuba).

Lateral angles of pronotum forming acute lobes, and posterior acute teeth; lateral angles of abdomen forming a less acute lobe, lateral borders of latter are slightly convex.
35. *bimini* Barber, 1954 (Rahamas).

37. Postero-lateral-anterior borders of pronotum generally provided in middle with a small tooth, therefore seeming twice sinuated; antennæ with fourth joint in males much longer than second and third together .... 36. *vicina* Handlirsch, 1897 (USA)[8]

Postero-lateral-anterior borders of pronotum simple, only once sinuated, antennæ of males with fourth segment relatively shorter .... 38.

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[8] Here should be intercalated palæarctic species of genus *Phymata* Latr., which can be separated from each other by the following key:

1. Lateral notch of pronotum more or less marked; lateral angles terminated in a tooth .... 2.

Pronotum without lateral notch; antero-lateral-anterior and antero-lateral-posterior borders forming a straight line; lateral angles forming an obtuse angle.
37. *crassipes* Fabr., 1775 (Europe, with exception of colder zones, NW–Africa, and Far East)

2. Fourth segment of antennæ in males is at least 1.5 times longer than second and third together, and in females distinctly longer than third; antero-lateral-anterior borders of pronotum provided with a stout tooth .... 38. *monstrosa* Fabr., 1794.

a. Lateral angles of pronotum terminated with a tooth; postero-exterior angles of connexiva dentiform, acute.
monstrosa Fabr. s. str. (S. France, Spain Corsica, Morocco, Algiers, Syria).

Lateral angles of pronotum without tooth; postero-exterior angles of connexiva angulated, blunt.
monstrosa griseipennis Horváth, 1907 (Algiers, Tunis).

Fourth segment of antennæ equal in length with second and third together (♂), or slightly longer than third (♀); antero-lateral-anterior borders of pronotum without or with a small and obtuse tooth.
39. *subinermis* Horváth, 1907 (Bukhara, Russian Turkestan).

When this part of the manuscript was composed, I had not received the types or paratypes of *Phymata chinensis* Drake, 1947, from Shantung, China, and the description was not enough to permit the separation of this species from *Phymata crassipes* (F.), so I omitted the former in the key. Later, Dr. Drake sent me for examination two paratypes, females, for which I express to him my sincere gratitude, and I could see that they represent a geographical subspecies of *P. crassipes* (F.). This question is treated with more details in another paper.

38. Head short, as long as or scarcely longer than wide across eyes; frontal processes short, only slightly notched, not reaching or scarcely reaching tip of first antennal segment; if they are somewhat longer, then head short, and in interior angle of corium in interior angle with a big, ovate, black spot .... 39.

Head distinctly longer than wide across eyes; frontal processes always notched and distinctly over-reaching tip of first joint 41.

39. Frontal processes slightly project beyond tip of first antennal joint; corium in interior angle with a big, ovate, back, or piceous spot.
40. *bipunctata* Kormilev, 1951 (Brazil).

Frontal processes very short, not or scarcely reaching tip of first antennal joint; corium in inner angle without ovate spot .... 40.

40. Lateral notch of pronotum wide and shallow; antero-lateral borders of abdomen first straight, then from fourth connexivum abruptly dilated in a convex line .... 41. *interjecta* Budich. 1922 (Haiti).

Lateral notch of pronotum short and deeper; abdomen dilated in a continuous line, first concave, then convex.
42. *malaisei* sp. nov. (Venezuela).

41. Head elongated, about 1.5 times longer than wide across eyes 42.

Head much shorter, never as much as 1.5 times as long as wide 43.

42. Carinæ of posterior lobe without tubercles on top.
43. *karschi* Handlirsch, 1897 (Brazil).

Carinæ of posterior lobe with distinct tubercles on top.
44. *aberrans* Dudich, 1922 (Brazil).

43. Lateral angles of pronotum simple, acute, directed sideways; carinæ of hind lobe without tubercles on top, rarely the latter scarcely noticeable .... 45. *erosa* (Linnæus) 1758.

a. Antennæ of male longer, fourth segment equal or subequal to second and third together; lateral angles of pronotum, acute, but spiniform; postero-lateral-anterior borders moderately sinuated, and carinæ of posterior lobe sometimes with small tubercles on top.
erosa (L.) s. str. (Guiana, Brazil, Trinidad, Colombia, Bolivia).

Antennæ of male shorter, fourth segment distinctly shorter than second and third together; lateral angles of pronotum spiniform; postero-lateral-anterior borders deeply sinuated, and carinæ of hind lobe always without tubercles .... *erosa huebneri* Melin, 1930 (Brazil, Perú).

Lateral angles of pronotum directed forwards and forming two lobes, more or less notched anteriorly, or at least one tooth and one lobe; carinæ of posterior lobe of pronotum provided with tubercle .... 44.

44. Frontal processes shorter and less notched; lateral angles of pronotum forming a small tooth and below it a rounded lobe; postero-lateral-anterior borders straight and subhorizontal at rest .... 46. *subarmata* Kormilev, 1953 (Argentina, Brazil).

Frontal processes stronger and more notched; lateral angles of pronotum forming a big lobe, more or less notched anteriorly, and directed obliquely forwards; postero-lateral-anterior borders generally somewhat convex .... 45.

45. Lateral angles of pronotum forming a big lobe, slightly notched anteriorly, sometimes forming one tubercle and one lobe.
47. *armata* Handlirsch, 1897 (Brazil, Argentina, Paraguay, Venezuela).

Lateral angles of pronotum forming a big lobe, deeply notched anteriorly, forming two acute angles.
48. *Parilis* Dudich, 1922 (Brazil).

46. Membrane with veins partially anastomosed.
49. *luxa* Evans, 1931 (U.S.A.).

Membrane with veins simple .... 47.

47. Carinæ of hind lobe of pronotum elevated as a roof from base to tip, seen from behind, they are higher than lateral angles; lateral notch small, but deep; abdomen much wider than pronotum .... 50. *maculipennis* Handlirsch, 1897 (Brazil).

Carinæ of the pronotum, seen from behind, always lower than lateral angles, and not so elevated, at most only on top .... 48.

48. Coloration of body black or sepia, with brown and pale ocraceous, or dirty white; middle and hind legs with dark rings; abdomen much wider than pronotum, dilated in a continuous line.
51. *severini* Handlirsch, 1897.

a. Head with frontal processes smaller and less notched; lateral angles of pronotum angulated, but not drawn out; abdomen somewhat wider, with postero-exterior angles of connexiva dentiform, but shorter.
severini Handlirsch s. str. (Mexico).

Frontal processes very strong and deeply notched; pronotum with lateral angles terminated in long and acute teeth; abdomen somewhat narrower, with postero-exterior angles of connexiva more projecting.
severini dyeri ssp. nov. (Honduras).

Coloration of body different middle and hind femora without dark rings, sometimes with pink or reddish rings; if coloration brownish, and middle and hind femora with dark rings, then lateral angles of pronotum rounded or almost rounded, without dentiform .... 49.

49. Carinæ of pronotum on top provided with high, rounded and granulated tubercle, but not elevated like a roof; coloration in life is pale-green and testaceous.
52. *færsteri* Kormilev, 1951 (Paraguay).

Pronotum different; coloration never pale-green and testaceous; if it is greenish, brown and black, then carinæ of pronotum without tubercle .... 50.

50. Antennæ of males with the fourth joint distinctly longer than the second and third together[4] .... 51.

Antennæ of males with fourth joint at most equal in length with the second and third together; if it is slightly longer, then lateral angles of pronotum very low, and maximal width of the latter is across posterior angles, or lateral angles in both sexes are produced in an acute tooth, and coloration of dorsal surface of body largely uniform dark mahogany, with indistinct black bands across connexivum, and of ventral dark-red with a touch of roseate, largely sanguineous .... 53.

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[4] If only the females are available, then the descriptions of *P. pulchra* Dudich, *P. mayri* sp. nov., and *P. pennsylvanica* Handlirsch, should be consulted.

51. Lateral angles of pronotum forming long, acute triangles, directed up and slightly backwards, somewhat shorter in females; lateral angles of abdomen pointed and bicolor, sharply differentiated into mahogany base and black tip.
53. *pulchra* Dudich, 1922 (Brazil).

Lateral angles of pronotum subrectangular (♂) or obtuse (♀), directed up and forwards; lateral angles of abdomen brown or reddish-brown, partially blackish, but not sharply differentiated into mahogany base and black tip .... 52.

52. Shorter; abdomen distinctly less long than wide (6:9); exterior borders of first three connexiva slightly sinuated.
54. *mayri* sp. nov. (Paraguay).

Longer; abdomen scarcely less long than wide (7:8); exterior borders of first three connexiva straight.
55. *pennsylvanica* Handlirsch (U.S.A.)

53. Fore disk of pronotum covered with fine erect spiculæ, setigerous or not .... 54.

Fore disk of pronotum covered with rounded, or spiculoid granulation, if the latter is fine and erect, then lateral angles of pronotum forming long teeth, and abdomen short and very wide (65:100) 57.

54. Fore disk of pronotum covered with setigerous spiculæ .... 55.

Fore disk of pronotum more or less covered with simple spiculæ, without setæ .... 56.

55. Granulation of body, particularly of its fore half, finer and more abundant, with longer setæ; smaller species (7 to 9 mm).
56. *rossi* Evans, 1931 (U.S.A.).

Granulation of body more robust, and less dense; bigger species (8 to 12 mm) .... 57. *granulosa* Handlirsch, 1897.

a. Lateral notch of pronotum deeper and shorter; antero-lateral-posterior borders very convex rounded .... b.

Lateral notch of pronotum wider and shallow; antero-lateral-posterior borders less convex.
granulosa evansi ssp. nov. (Mexico, El Salvador).

b. Granulation of body more abundant, and on fore half spiculoid; pleuræ and venter with setigerous granulation; postero-exterior angles of connexiva angulated.
granulosa Handlirsch s. str. (Mexico, Costa Rica).

Granulation of body less abundant; pleuræ and particularly venter almost without granulation; postero-exterior angles of connexiva dentiform.
granulosa Handlirsch s. str. (Mexico, Costa Rica).

56. Median carina of scutellum robust, high, naked and shiny; bigger species (7.5 to 8.5 mm).
58. *breviceps* Stål, 1876 Colombia, Bolivia).

Median carina of scutellum lower, opaque and granulated; smaller species (6 to 8 mm).
59. *delpontei* Kormilev, 1950 (Argentina, Brazil, Paraguay, Bolivia).

57. Granulation of body rounded, but distinctly setigerous; carinæ of pronotum on top forming rooflike elevation.
60. *guérini* Lethierry & Severin, 1896 (Cuba).

Granulation of body without setæ; if it is slightly setigerous, then carinæ of pronotum simple, not elevated on top .... 58.

58. Posterior border of fore disk of pronotum with a high tubercle at base of carinæ, latter are neither rooflike elevated nor provided with a tubercle on top; coloration of female mahogany, testaceous, and ivory .... 61. *birabeni* Kormilev, 1950 (Argentina).

Pronotum is different; if the carinæ are provided with a tubercle, this is situated on top .... 59.

59. Lateral angles of pronotum raised and produced into a long acute tooth, directed up and slightly sideways; carinæ of same sharply marked, but slightly inflated only on top, neither forming a rooflike ridge, nor provided with a tubercle; antero-lateral-borders of abdomen more (♂) or less (♀) abruptly dilated from the fourth connexivum; coloration dark mahogany, with obliterated, transverse, black bands on connexivum, and on ventral surface red, with a touch of roseate, almost sanguineous.
62. *arctostaphylæ* Van Duzee, 1914 (U.S.A.).

Pronotum and coloration different, latter never dark mahogany with obliterated black bands on dorsal, and red, with a touch of roseate on ventral surface .... 60.

60. Carinæ of pronotum elevated in the form of a "roof" on top or provided with a tubercle; abdomen dilates abruptly from fourth connexivum .... 63. *fasciata* (Gray), 1832.

a. Lateral angles of pronotum lower and less dentiform, generally forming an obtuse or right angle, rarely provided with a small tooth; abdomen less dilated laterally; lateral angles of abdomen forming a right or obtuse angle; if it is somewhat acute, then antero-lateral-posterior borders feebly convex and rounded, and posterior angles small.
fasciata (Gray) s. str. (USA, Mexico).

Lateral angles of pronotum are dentiform, acute; abdomen more dilated laterally, its lateral angles are acute or subrectangular, rarely, in some females, somewhat obtuse, then antero-lateral-posterior borders of pronotum very convex .... b.

b. Antero-lateral-anterior and antero-lateral-posterior borders of pronotum rounded and generally convex; lateral and posterior angles of the same forming long and acute teeth; granulation on fore disk rounded.
fasciata mystica Evans, 1931 (USA).

Antero-lateral-anterior borders of pronotum rounded or angulated, sometimes terminated with a small tooth; antero-lateral-posterior borders very convex, rounded or angulated; in the first case posterior angles small; fore disk with spiculoid granulation or with fine, erect spiculæ .... c.

c. More robust and elongated subspecies (8 to 10.5 mm); connexiva with smaller and protruding less postero-exterior angles; for disk with spiculoid granulation.
fasciata mexicana Melin, 1930 (Mexico, Guatemala, Costa Rica)

More slender and shorter subspecies (7.5 to 8.5 mm); postero-exterior angles of connexiva dentiform, fine and long; fore disk with fine erect spiculæ.
fasciata panamensis sp. nov. (Panama, Costa Rica).

Carinæ of pronotum neither elevated as a roof, nor provided with a tubercle; if they are somewhat elevated on top or provided with a small tubercle, then they belong to an elongated species, with abdomen dilated laterally in a continuous line, never abruptly. 61.

61. Elongated species, generally in both sexes more than twice as long as wide across abdomen, exceptionally, latter can be slightly wider, but always dilated in a continuous line, never abruptly, or concave at base and then convex .... 62.

Less elongated species with a different abdomen .... 69.

62. Bigger (7.5 to 12 mm); carinæ of pronotum on top generally elevated as a rooflike ridge, or provided with a tubercle, sometimes only slightly inflated, but in that case head distinctly longer than wide across eyes, and preocellar processes raised above dorsal level of head .... 64. *americana* Melin, 1930.

a. Bigger (9 to 12 mm); carinæ of pronotum generally elevated on top forming rooflike ridge, or provided with a tubercle.
americana coloradensis Melin, 1930 (U.S.A. W and SW. Mexico).

Smaller (7.5 to 10 mm); carinæ of pronotum simple, neither forming a rooflike ridge, nor provided with a tubercle. b.

b. Bigger (8 to 10 mm); ocellar processes high, slender, sometimes ramificated, almost without granulation; lateral notch of pronotum wider and deeper.
americana Melin s. str. (U.S.A. E and SE, Canada, Mexico).

Smaller (7.5 to 8 mm); ocellar processes low and granulated; lateral notch of pronotum smaller and shallow.
americana metcalfi Evans 1931 (U.S.A. NW)

Smaller species (6 to 8 mm), exceptionally (some females of *P. bogotana* Handlirsch) can be bigger (9 to 10 mm), but in latter case head very short, and preocellar processes not raised above dorsal level of head .... 63.

63. Frontal processes small, slightly notched anteriorly; pronotum somewhat depressed; lateral angles low and less expanded; lateral notch small and shallow, sometimes almost absent .... 64.

Frontal processes more robust, and generally deeply notched; pronotum less depressed; lateral angles more expanded and generally more elevated; lateral notch bigger and deeper .... 66.

64. Long and narrow, more than twice as long as wide across abdomen; antero-lateral and postero-lateral borders of the latter distinctly sinuated; coloration black and yellow, forelegs piceous; females yet unknown .... 65. *atra* Melin, 1930 (Bolivia).
    Less elongated, only twice as long as wide across abdomen; coloration not so dark; antero and postero-lateral borders of abdomen straight or convex .... 65.

65. Body more scabrous and opaque; antero and postero-lateral borders of abdomen scarcely (♂) or distinctly (♀) convex; carinæ of pronotum and connexivum without gleam; coloration: yellow, chestnut and black (♂), or testaceous, ventral surface and legs roseate (♀) .... 66. *borica* Evans, 1931 (U.S.A).
    Body more glabrous; carinæ of pronotum and outer borders of connexiva shiny; antero and postero-lateral borders of abdomen srtaight (♂) or very convex (♀); coloration buff (♂) or yellow (♀) with roseate .... 67. *boliviana* Dudich, 1922 (Bolivia).

66. More elongated species, in both sexes at least twice as long as wide across abdomen; lateral angles of pronotum obtuse or slightly rounded at tip; lateral angles of abdomen almost rounded (♂) or rounded (♀); coloration very light; pale yellow and roseate, exceptionally, some males of *P. debilis* Handl., darker, with testaceous spots .... 67.
    Less elongated species, females sometimes less than twice as long as wide across abdomen; lateral angles of pronotum and of abdomen generally angulate, exceptionally, in some females, slightly rounded; coloration darker, with testaceous and sometimes (♂) piceous or black spots .... 68.

67. Bigger (7 to 8 mm); frontal processes longer and more acute, carinæ of pronotum at top slightly inflated, conspicuous from base to tip; membrane brown .... 68. *salicis* Cockerell, 1900 (U.S.A).
    Smaller (6 to 7.5 mm); frontal processes shorter and blunt; carinæ of pronotum finer and lower, in middle sometimes obliterated; membrane hyaline .... 69. *debilis* Handlirsch, 1897 (Brazil)

68. Frontal processes short, reaching or almost reaching tip of first antennal joint; ocellar processes very small, scarcely marked; posterior disk of pronotum very convex; carinæ of the same at base parallel, then divergent, in middle slightly obliterated; lateral angles of pronotum are low and blunt apically; body partially shiny .... 70. *bogotana* Handlirsch, 1897 (Colombia, Zenezuela).
    Frontal processes stout, projecting beyond tip of first antennal joint; ocellar processes dentiform, erect; posterior disk of pronotum less convex; carinæ of the same divergent from the base, conspicuous from base to the tip; lateral angles of pronotum elevated and angulated, sometimes dentiform; body opaque, without any gleam .... 71. *pacifica* Evans, 1931.
    a. Lateral notch of pronotum shorter and deeper, rectangular; lateral angles of abdomen angulated in both sexes; granulation of body more conspicuous, particularly on connexivum .... *pasifica stanfordi* Evans, 1931 (U.S.A.).

Lateral notch of pronotum wider and shallower, forming an obtuse angle; granulation on connexivum less conspicuous; lateral angles of abdomen in females almost apically rounded .... b.

b. Lateral angles of pronotum less elevated, forming an obtuse angle; terminated with a small tooth; anero- and postero-lateral borders of abdomen almost straight (♂), or slightly convex (♀) .... *pacifica* Evans s. str. (USA).

Lateral angles of pronotum more elevated and expanded, forming an acute (♂), or right (♀) angle; antero- and postero-lateral borders of abdomen sinuated (♂), or almost straight (♀) .... *pacifica hainesi* ssp. nov. (Mexico).

69. Head short, as long as, or slightly longer than wide across eyes; frontal processes short or very short; if head is distinctly longer than wide across eyes (22:19), frontal processes very short and fused together in a plate; in this case granulation of body is very fine and scarcely noticeable .... 70.

Head distinctly longer than wide across eyes, frontal processes well developed and deeply notched; if the latter are somewhat shorter, then granulation more conspicuous .... 80.

70. Lateral angles of pronotum elevated and almost rounded at tip, rarely forming an obtuse angle; antero-lateral-posterior borders of the same are rounded and very convex; antero-lateral borders of abdomen sinuated at base, then convex (♂), or slightly convex (♀); coloration very variable: males generally brown with testaceous and pale ocraceous, females somewhat paler, middle and hind femora sometimes with dark rings.

72. *parva* Handlirsch, 1897 (Mexico, Guatemala).

Pronotum different, particularly antero-lateral-posterior borders never so convex; middle and hind femora never with dark rings, at most with reddish or roseate .... 71.

71. Lateral angles of pronotum very low, and generally approached to posterior, sometimes marked only by change of level .... 72.

Lateral angles of pronotum always more developed; if they approached to posterior, then postero-lateral-anterior borders deeply sinuated .... 75.

72. Lateral notch bigger, deeper and angulate; lateral angles less approached to posterior, latter dentiform, protruding (Maximal width of pronotum); antero- and postero-lateral borders of abdomen in male distinctly sinuated; females yet unknown.

73. *carioca* Kormilev, 1951 (Brazil).

Lateral notch of pronotum small and shallow, sometimes scarcely marked; lateral angles approached to posterior; later small, forming a right or obtuse angle, sometimes rounded apically .... 73.

73. Opaque species, with pale granulation on dark background, very conspicuous.

74. *conspicua* Scott, 1870 (Guiana, Colombia, Costa Rica).

Shiny and smooth species, with less conspicuous granulation, sometimes scarcely marked .... 74.

74. Head distinctly longer than wide across eyes (22:19); frontal processes fused together into short plate, rounded anteriorly; granulation very fine, scarcely marked, therefore body smooth, resembling china .... 75. *colombiana* sp. nov. (Colombia).

Head very short, less long than wide across eyes (20:21); frontal processes, though short and only slightly notched, not forming a plate; granulation more conspicuous.

76. *haywardi* Kormilev, 1950 (Argentina, Paraguay, Brazil).

75. Opaque and somewhat scabrous species, at most if pronotal and scutellar carinæ smooth and somewhat shiny .... 76.

Shiny and rather smooth species .... 77.

76. Bigger (7.5 mm); lateral notch of pronotum wide and shallow; lateral angles approached to the posterior, pronotal and scutellar carinæ somewhat shiny .... 77. *inconspicua* sp. nov. (Venezuela).

Very small (5.5 mm); lateral notch of pronotum short and deep; lateral angles not approached to posterior.

78. *minuta* sp. nov. (Honduras).

77. Pronotum strongly declivous anteriorly, almost vertical, posteriorly subhorizontal; coloration of body sharply limited, and particularly on pronotum shows a considerable contrast; anteriorly pale yellow, posteriorly brown; abdomen, particularly in male strongly dilated.

79. *cinnamomea* Handlirsch, 1897 (Brazil, Argentina, Paraguay, Bolivia).

Pronotum less declivous anteriorly (about 45°); coloration never so contrast as in preceding species .... 78.

78. Lateral angles of pronotum, seen from behind, almost vertical; antero-lateral-posterior borders subequal in length with postero-lateral-anterior.

80. *barberi* sp. nov. (Mexico, Guatemala?, Panama, Costa Rica).

Lateral angles of pronotum, seen from behind, somewhat inclined outwards; antero-lateral-posterior borders distinctly longer than postero-lateral-anterior, lateral angles therefore approached to posterior .... 79.

79. Smaller (7 to 7.5 mm); frontal processes generally acute and divergent, lateral angles of pronotum more elevated, forming a sharply outlined angle; middle and hind femora yellow.

81. *andina* Melin, 1930 (Colombia, Venezuela).

Bigger (7 to 9 mm); frontal processes blunt, sometimes scarcely notched; lateral angles of pronotum less elevated, obtuse or rounded apically; middle and hind femora with reddish or roseate rings, or completely roseate .... 82. *carneipes* Mayr, 1865.

a. Lateral angles of abdomen rounded apically (♂), or rounded (♀) .... *carneipes* Mayr, s. str. (Brazil, Paraguay).

Lateral angles of abdomen in both sexes angulate, and more protruding, though tip somewhat blunt.

carneipes angulata ssp. nov. (Brazil).

80. Very big and shiny (8.5 to 12 mm); lateral angles of pronotum extended into long and acute lobes (♂), or lower and rectangular lobes (♀), approached to posterior angles; venter, particularly

in females, very convex; connexivum with transverse, reddish-brown or black, bands; antero-lateral borders of abdomen straight (♂) or very convex (♀).

83. *præstans* Handlirsch, 1897 (Brazil, Paraguay).

Smaller and opaque (6 to 10.5 mm), at most carinæ of pronotum somewhat shiny; body more depressed, and venter less convex .... 81.

81. Smaller species (6 to 8 mm); completely opaque and rather scabrous; pronotum anteriorly more declivous and narrower; lateral notch short and deep; antero-lateral anterior and antero-lateral-posterior borders convex; shape of abdomen very variable.

84. *communis* Handlirsch, 1897 (Brazil, Perú, Bolivia, Paraguay, Argentina, Uruguay).

Bigger species (7 to 10.5 mm); pronotum anteriorly less declivous, wider, and less scabrous; carinæ of pronotum sometimes shiny; lateral notch wider and less deep; antero-lateral-anterior and antero-lateral-posterior borders less convex .... 82.

82. Lateral angles of pronotum extended into long and acute lobes (♀); antero-lateral-posterior borders subequal in length to postero-lateral-anterior; postero-lateral borders of abdomen distinctly sinuated; males yet unknown.

85. *bergi* Kormilev, 1950 (Uruguay, Brazil).

Lateral angles of pronotum much lower, particularly in females, though sometimes extended into a tooth; antero-lateral-posterior borders distinctly longer than postero-lateral-anterior; abdomen in females generally with srtaight or slightly convex postero-lateral borders .... 86. *chilensis* Handlirsch, 1897.

a. Lateral angles of pronotum low, obtuse, rounded at tip; coloration of body often reddish or violaceous, with brown and blackish; rarely yellow with brown and blackish .... b.

Lateral angles of pronotum angulated, and generally terminated with a small tooth; coloration yellow or ocraceous, with brown and black, rarely with reddish or violaceous. c.

b. Less depressed; lateral angles of pronotum more raised; abdomen wider, lateral angles of same angulated though forming an obtuse angle.

chilensis Handlirsch s. str. (Chile).

More depressed and more elongated; lateral angles of pronotum lower, apically obtuse; lateral angles of abdomen obtuse (♂) or somewhat rounded (♀).

chilensis monrosi Kormilev, 1950 (Argentina and Bolivia).

c. Body is narrower, abdomen less dilated laterally; lateral angles of pronotum generally terminated with a small tooth, sometimes absent; coloration variable; yellow with brown and black, rarely reddish with brown and black.

chilensis cordobensis Kormilev, 1951 (Argentina).

Body wider, abdomen more dilated laterally; lateral angles of pronotum more raised and terminated with a longer tooth; coloration yellow, or pale yellow with brown and black, sometimes ocraceous with brown and black, but never reddish or violaceous .... d.

d. Frontal processes relatively short and blunt; lateral angles of pronotum terminated with more or less acute tooth, inclined outwards .... *e.*

Frontal processes long and acute; lateral angles of pronotum terminated with an acute tooth, inclined forwards; coloration generally pale yellow with brown and black.
chinensis uruguayensis Kormilev, 1951 (Uruguay, Argentina, Paraguay, Brazil).

e. Lateral angles of pronotum less extended, posterior less developed; antero-lateral-posterior borders distinctly convex .... c. *chilensis pampeana* Kormilev, 1951 (Argentina).

Lateral angles of pronotum more extended and more acute; antero-lateral-posterior borders scarcely convex, almost straight .... *chilensis brasilensis* ssp. nov. (Brazil).

B. Subgenus NEOPHYMATA novum

Has a single species .... 87. *bosqui* Kormilev, 1950 (Argentina).

C. Subgenus EURYPHYMATA novum

Has a single species .... 88. *superba* sp. nov. (Haiti).

D. Subgenus PHYMATISPA Kormilev, 1951

Phymata subgen. *Phymatispa* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 54.

This subgenus contains only two species belonging to rather different groups and united in the same subgenus only because both have the same type of the forked parameres, not found in any other subgenus or genus of Phymatinæ. These species are the superspecies of *Phymata* (*Phymatispa*) *fortificata* H. Sch. (1844) and species *Phymata* (*Phymatispa*) *paradoxa* Kormilev (1952), which can be separated from each other as follows:

1. Lateral notch of pronotum lacking; carinæ of hind lobe without erect spines; fourth antennal joint of males more than 1.5 times as long as second and third together.
89. *paradoxa* Kormilev, 1952 (Paraguay; Brazil).

Lateral notch of pronotum very deep; antero-lateral-posterior and postero-lateral-anterior borders forming together a big, anteriorly more or less cut out, lobe, directed up and forwards; carinæ of the hind lobe provided at the base and on top with strong, erect spines; fourth antennal joint of males is at most slightly longer than second and third together .... 90. *fortificata* H. Sch., 1844.

a. Abdomen dilated more regularly, almost in a continuous line, angle formed by exterior borders of third and fourth connexiva not sharply marked; postero-exterior angles of connexiva forming relatively longer teeth .... b.

Abdomen from middle of third connexivum dilated abruptly, forming a sharply marked, though obtuse, angle; connexiva with postero-exterior angles dentiform, but relatively less protruding .... e.

b. Frontal processes very strong and deeply notched, generally directed forwards and more or less upwards; abdomen strongly dilated; connexiva with long, dentiform postero-exterior angles .... c.

Frontal processes much shorter and vertical; abdomen less dilated; postero-exterior angles of connexiva though dentiform, much shorter .... d.

c. Frontal processes long and stout, directed forwards or slightly upwards; preocellar processes generally elevated above level of frontal plate; fourth antennal point of males equal in length or slightly longer than second and third together.

fortificata H. Sch. s. str. (Brazil, Paraguay, Bolivia, Argentina).

Frontal processes strong, generally directed obliquely upwards; preocellar processes never elevated above level of frontal plate; fourth antennal joint of males slightly shorter than second and third together.

fortificata paranensis Kormilev, 1951 (Brazil, Paraguay, Argentina, Uruguay).

d. Frontal processes somewhat longer, sometimes as long as in *paranensis,* but vertical; antero-lateral-anterior borders of pronotum more elevated and notch before lateral angles (not lateral notch) deeper; postero-exterior angles of connexiva dentiform but less protruding than in *paranensis.*

fortificata patagonica Kormilev, 1951 (Argentina).

Frontal processes very short, vertical; antero-lateral-anterior borders very low, forming a very obtuse angle; notch before lateral angles scarcely marked; postero-exterior angles of connexiva short, more tuberculiform than dentiform.

fortificata sanjuanensis Kormilev, 1950 (Argentina).

e. Lateral projection of abdomen unusually developed, directed sideways and slightly forwards; posterior part of abdomen, back of lateral angles, with rare exceptions, strongly abbreviated; exterior angles of fifth tergum (not fourth connexivum) rectangular; postero-exterior angles of connexiva dentiform, strongly protruding, but less than in *fortificata* s. str. or *paranensis.*

fortificata tessera Hoberlandt, 1947 (Argentina. Paraguay, Bolivia).

Abdomen transverse but less dilated than in *tessera,* not so abbreviated posteriorly; exterior angles of fifth tergum always obtuse; postero-exterior angles of connexiva shorter, but not tuberculiform .... f.

f. Frontal processes longer and deeply notched; lateral lobes of pronotum, formed by antero-lateral-posterior and postero-

lateral-anterior borders, more notched anteriorly, and more protruding forwards; lateral projections of abdomen more developed, sometimes protruding almost as in *tessera;* postero-exterior angles of connexiva dentiform, but shorter than in *tessera.*
fortificata argonita Pennington, 1919 (Argentina, Bolivia).

Frontal processes short and vertical; lateral lobes of pronotum shorter and lower, slightly notched anteriorly; abdomen less transverse; postero-exterior angles of connexiva very short, though not tuberculiform. This subspecies is very similar to *sanjuanensis*, differing mainly by the abdomen abruptly dilated, whereas in *sanjuanensis* it is dilated in a rounded, continuous line, then postero-exterior angles of connexiva short but dentiform.
fortificata montana Kormilev, 1951 (Argentina).

Genus II. PARAPHYMATA novum

Genotype: *Paraphymata saileri* sp. nov.

Has a single species .... 91. *saileri* sp. nov. (Haiti).

Genus III. ANTHYLLA Stål, 1876

Anthylla STÅL, Enum. Hem. 5 (1876) 131.

Phymata HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 144.

Phymata (*Anthylla*) KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 54.

Haplotype: *Phymata nervoso-punctata* Signoret, 1863.

Has a single species .... 92. *nervoso-punctata* Signoret, 1863 (Chile).

Genus IV. NEOANTHYLLA Kormilev, 1951

Phymata (*Neoanthylla*) KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 54.

Genotype: *Phymata* (*Neoanthylla*) *bucki* Kormilev, 1951.

Has only two very allied species, which can be separated as follows:

1. Lateral and posterior angles of pronotum dentiform, protruding; postero-lateral-anterior borders deeply, angularly notched; postero-exterior angles of connexiva dentiform, protruding; lateral angles of abdomen acute .... 93. *horvathi* Handlirsch, 1898 (Brazil).

Only lateral angles of pronotum dentiform, whereas posterior subrectangular, slightly obtuse; postero-lateral-anterior borders sinuated but not angularly notched; postero-exterior angles of connexiva first and second scarcely protruding, those of the third tuberculiform; lateral angles of abdomen rectangular.
94. *bucki* Kormilev, 1951 (Brazil).

DESCRIPTIONS

Genus I. PHYMATA Latreille, 1802

A. Subgenus PHYMATA Latreille s. str.

Subgenotype: *P. crassipes* (F.)

1. PHYMATA DISTANTI Handlirsch, 1897. Plate 3, figs. 28, 29

Phymata distanti HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 157, Plate 4, fig. 9.

I have not seen this species, which was described on the basis of a single female specimen. It is somewhat allied to *Phymata marginata* (F.) (1803) and P. *emarginata* Guérin (1856), but it comes first for the sake of keying, because it does not fit in any of the two big groups, with linear or cruciform median carina of the scutellum. The following description is compiled from Handlirsch.

Female.—Head a little longer than wide across the eyes; frontal processes small, slightly notched; ocellar processes small, tuberculiform; antennæ slender, A4 is slightly less long than A2 and A3 together.

Pronotum strongly transverse, half as long as wide across the humeri; anterior angles dentiform, directed forwards; ALA-borders slightly convex, crenelated; lateral notch short and deep; ALP-borders strongly convex, rounded, lateral and posterior angles together form winglike vertical lobes; lateral angles forming an obtuse angle, tip with a small tooth; PLA-borders slightly sinuated; posterior angles strong, angular, acute, protruding, maximal width of pronotum; fore disk granulated hind disk slightly punctated, with carinæ almost obliterated; posterior processes scarcely marked.

Scutellum without median carina.

Hemelytra without granulation; membrane hyaline.

Abdomen very wide, almost rhomboidal; Al-borders stronger, PL-borders less sinuated; PE-angles slightly protruding; lateral angles rectangular.

Legs: Fore-femora very small, strongly inflated, disk without granulation UBF crenelated.

Coloration: Pale yellow-brown, lateral angles of pronotum and abdomen somewhat darker.

Female.—Total length, 10.5 mm; width of pronotum, 5.5 mm; width of abdomen, 7.5 mm.

Patria: Jamaica.

Type: Female, Jamaica—ex-collection of Distant.

2. PHYMATA PRODUCTA Hoberlandt, 1944. Plate 3, figs. 30, 31.

Phymata producta HOBERLANDT, Sbor. Ent. Odd. Zem. Mus., Praha 21–22 (1944) 423, fig. 1.

I have not seen the type of this striking species, but I was able to examine also a male specimen, in the American Museum of Natural History, New York. Comparing it with the description and drawings of Hoberlandt I could see that it slightly differs from the last. The proboscis formed by the frontal plates is more constricted before the apex, and the PE-angles are more protruding and more rounded. Hoberlandt placed *P. producta* near the "longiceps group" to which it is not related, but is isolated in the genus, and would probably need a separation into a different subgenus.

Male.—Head much longer than wide across the eyes (80:23); anterior process, formed by the frontal processes fused together, produced into a long, somewhat compressed laterally and dilated anteriorly, finely granulated trunk; its apex is slightly notched in the middle, rounded laterally; vertex with V-shaped sulcus; preocellar processes separated from the frontal processes, but not raised above the upper surface of head; ocellar processes practically absent, so that ocelli fully exposed from above. Antennal excavation of head shallow; proportions of antennal segments (1 to 4) are: 7.5:13:7:45. Rostrum normal for the genus.

Pronotum half as long as wide across lateral angles (48:81); fore border widely emarginate; anterior angles dentiform, directed forward; ALA–borders crenulated, convex, forming a very obtuse angle; lateral notch absent; ALP–borders scarcely concave, crenulated; lateral angles rectangular, expanded and raised; PLA-borders convex, posterior angles small, directed outward; posterior border convex. Fore disk inflated, scabrous, finely granulated, anteriorly with a smooth triangle; posterior disk inflated and depressed on median line; carinæ divergent backward, not very distinct, granulated anteriorly.

Scutellum small, shorter than wide (15:25); lateral borders rimmed, but not denticulated; disk inflated and roughly granulated; carina almost indistinct, linear.

Hemelytra without granulation; membrane dark-brown; veins simple.

Abdomen as long as wide (100:100); PE-angles progressively more protruding, rounded. Venter with semi-obliterated granulation.

Pleuræ: On inferior one-third of disk granulated; antennal excavation wide and deep, running through to hind border, tips of antennæ at repose seen from above; fore border smooth on upper half, provided with 2 to 3 long teeth on lower half.

Legs: Fore-femora moderately big (40:20); disk inflated and finely granulated; upper border crenulated.

Coloration: Black or sepia with ochre-brown to brown; tips of femora and tibiæ, venter with exception of base, and hind third of abdomen on dorsal surface, ochre-brown to yellowish.

Male, holotype: Total length, 11 mm; width of abdomen, 4.32 mm; specimen in the American Museum, also a male: total length, 12.2 mm; width of pronotum, 4.02 mm; width of abdomen, 5 mm.

Patria: Brazil (Sâo Paulo, Sta. Catarina).

Type: Brazil, Sâo Paulo—deposited in the Zemalski Museum in Praha.

3. PHYMATA OXYCEPHALA Dudich, 1922. Plate 3, figs. 32, 33.

Phymata oxycephala DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 166, fig. 2.

Female.—Head distinctly longer than wide across eyes (27:21); frontal processes fused into a long, pointed beak, directed forwards; ocellar processes small, tuberculiform; whole frontal plate elongately triangular; antennæ slender; proportions are: 6:12:13:21, male probably fourth joint long and cylindrical.

Pronotum less long than wide (43:57); anterior border deeply sinuated; anterior angles angular, acute, directed forwards; ALA- and ALP- borders forming together a straight line; lateral notch absent; lateral angles marked only by a change of level; PLA-borders short and straight; posterior angles blunt, horizontal; PLP-borders twice as long as PLA-borders; fore disk partially granulated; carinæ anteriorly convergent, in the middle parallel, posteriorly divergent, with sparse granulation.

Scutellum less long than wide (18:22); median carinæ linear, granulated.

Hemelytra without granulation; membrane reddish brown, variegated.

Abdomen longer than wide (95:90); AL- and PL-borders slightly convex; lateral angles form an obtuse angle; PE-angles slightly protruding, Pe4 somewhat more.

Pleuræ: Propleuræ granulated; fore border denticulated inferiorly; AEP wide and deep, not reaching lateral angles; MM-pleuræ slightly granulated at the periphery, discs without granulation.

Legs: Fore-femora inflated, longer than wide (34:19), disk without granulation, UBF crenelated.

Coloration: Opaque, brown, somewhat reddish; connexivum yellow; venter ochraceous.

Female.—Total length, 10.8 mm; width of pronotum, 3.5 mm; width of abdomen, 5.5 mm.

Patria: Perú.

Type: Female, Perú—deposited in the Hungarian National Museum, Budapest.

4. PHYMATA MANSOSOTOI Kormilev, 1952. Plate 3, figs. 34-35.

Phymata mansosotoi KORMILEV, Mis. Est. Pat. Reg. Arg. 13 (1952) 125, fig. 1.

Male.—Head longer than wide across eyes (22:15); frontal processes fused together into a pointed beak, curved apically downwards; ocellar processes small, tuberculiform; antennæ slender, A4 long, cylindrical, proportions of joints are: 3.5: 8:7:25.

Pronotum less long than wide (30:48), rather depressed; anterior border deeply sinuated; anterior angles angular, directed forwards; ALA- and ALP-borders forming together a straight line; lateral notch absent; lateral angles forming a horizontal, obtuse angles; PLA-borders short, slightly sinuated; posterior angles small, directed sideways, fore disk granulated; carinæ divergent backwards.

Scutellum less long than wide (10:15); median carina linear, granulated.

Hemelytra finely granulated; membrane brown.

Abdomen longer than wide (62:60); AL-borders straight, PL-borders scarcely sinuated; lateral angles forming an obtuse angle; PE-angles scarcely protruding, Pe4 slightly protruding, horizontal.

Pleuræ: Propleuræ granulated; fore-border finely denticulated, inferiorly with one strong tooth; AEP broad and deep, reaching lateral angles. MM-pleuræ almost without granulation.

Legs: Fore-femora rather flat, longer than wide (21:10.5; disk finely granulated; UBF crenelated.

Coloration: Yellow-brown or buff, partially blackish and dark brown, ALA-borders whitish; connexivum and venter yellow.

Male.—Total length, 7.4 mm; width of pronotum, 3.0 mm; width of abdomen, 3.7 mm.

Patria: Argentina (Misiones.)

Types: Male, Argentina, Misiones, Santo Pipó, November, 1951 (*J. Fœrster*). Deposited in the collection of the author.

5. PHYMATA RIOJANA Pennington, 1919. Plate 5, figs. 37 and 38.

Phymata riojana PENNINGTON, Physis 4 (1919) 525, Plate 1, figs. 1–6.

Phymata riojana PENNINGTON, Lista Hem. Het. Rep. Arg. 2 (1921) 21.

Phymata riojana JENSEN-HAARUP, Saert, Ent. Medd. 14 (1922) 6.

Phymata riojana KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 78, fig. 80.

Female.—Head twice as long as wide across eyes (24:12), as long or almost as long as pronotum; frontal processes fused together into a stout, long trunk, tapering anteriorly and truncated at tip; ocellar processes small, tuberculiform; antennæ slender, A4 fusiform, proportions are: ♂, 4:7:7:12; ♀, 4:7:7:8.

Pronotum less long than wide (22:27); anterior border widely sinuated; anterior angles wide, angular, directed forwards; ALA-borders rounded; lateral notch deep, rounded, ALP-borders rounded and raised; lateral angles forming elevated lobes, slightly inclined out and forwards, tip blunt: PLA-borders straight; posterior angles blunt; fore disk finely granulated; carinæ high, slender, divergent backwards, with a tubercle on top.

Scutellum less long than wide (6:10); median carina linear, granulated.

Hemelytra without granulation; membrane brown.

Abdomen cruciform, AL- and PL-borders in both sexes deeply sinuated; less long than wide (42:51); PE-angles not protruding: Pe4 protruding, acute; exterior border of connexivum IV convex; lateral angles forming slightly acute angles; connexivum and venter granulated; abdomen in females slightly less dilated.

Pleuræ: Propleuræ granulated; fore-border crenelated; but without bigger teeth, AEP short and very deep, reaching lateral notch. MM-pleuræ with dispersed granulation.

Legs: Fore-femora elongated (16:7), slightly inflated, disk almost without granulation; UBF crenelated.

Coloration: ♂, Yellow, partially roseate, transversal band of abdomen brown or reddish-brown; ♀, paler.

Total length: ♂, 6; ♀, 5 mm; width of pronotum: ♂, 1.7; ♀, 1.6 mm; width of abdomen: ♂, 3.5; ♀, 3.3 mm.

Patria: Argentina (La Rioja, Córdoba, Chaco, Corrientes).

Type: The sex was not indicated by Pennington, Argentina, La Rioja; deposited in the ex-collection of Pennington, now Drake collection, Ames, Iowa, U.S.A.

5. PHYMATA CARVALHOI Kormilev, 1950. Plate 4, figs. 39, 40.

Phymata carvalhoi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 588.

Female.—Head much longer than wide across eyes (20:12); frontal processes fused together in a stout trunk, tapering anteriorly and truncated at tip, ocellar processes marked only as small granulæ; proportions of the antennal joints are: 3.5: 7:8:9; granulation of the body is conspicuous, rounded.

Pronotum rather flat, less long than wide (22:31); fore border slightly sinuated; anterior angles small, dentiform, directed sideways; ALA-borders rounded; lateral notch shallow, rounded; ALP-borders scarcely convex, rounded; lateral angles blunt, slightly protruding sideways; PLA-borders sinuated; posterior angles small, angular, directed sideways; fore disk granulated laterally; hind disk rather flat, strongly punctated but almost without granulation; carinæ stout, low, divergent backwards, slightly obliterated posteriorly.

Scutellum less long than wide (8:12); median carina linear, slightly blurred, granulated; disk also granulated.

Hemelytra without granulation; membrane white.

Abdomen slightly longer than wide (50:48); AL- and PL-borders slightly sinuated; the fourth connexivum slightly convex exteriorly; lateral angles blunt, rounded apically; PE-angles tuberculiform, not protruding, Pe4 slightly protruding, rounded; connexivum with sparse granulation.

Pleuræ: Propleuræ granulated; fore border crenelated, but without bigger teeth; AEP moderately wide and shallow, slightly projects beyond the lateral notch. MM-pleuræ with fine, dispersed, reddish granulation.

Legs: Fore-femora long (22:7), slightly inflated, disk without granulation, UBF finely crenelated.

Coloration: Ochraceous with reddish brown; pleuræ and abdomen partially roseate, venter yellow.

Female.—Total length, 6.4 mm; width of pronotum, 1.9 mm; width of abdomen, 3.0 mm.

Patria: Brazil (Minas Geraes).

Type: ♀, Brazil, Minas Geraes, Vicosa (*Dr. J. C. M. Carbalho*). Deposited in the Wygodzinsky collection, Tucumán, Argentina.

7. PHYMATA SPINOSISSIMA Mayr, 1865.

Phymata spinossima MAYR, Verh. Zool. Bot. Ges., Wien 15 (1865) 442.

Phymata spinosissima MAYR, Reise Freg. Novara un die Erde (1866) 168, Plate 5, fig. 49.

Phymata spinosissima HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 178, Plate 5, fig. 1.

Female.—Head longer than wide across eyes (15:10); frontal processes fused into a concave plate, rounded anteriorly, ocellar processes small, dentiform; fourth antennal joint half as long as second and third together. Head, pronotum, scutellum, abdomen, and legs covered with dense, mostly erect, fine spiculæ, partially setigerous; spiculæ on clavus and corium less dense.

Pronotum less long than wide (12:16); fore-border widely sinuated; anterior angles dentiform, slightly divergent; ALA-borders slightly convex and with strong, setigerous spines; lateral notch rounded; ALP-borders almost straight; lateral angles slightly expanded, but not raised; PLA-borders straight, slightly convergent backwards; posterior angles small, directed sideways; fore disk with dense, erect spiculæ; hind disk also with setigerous spiculæ; carinæ slightly divergent backwards, covered with spiculæ.

Scutellum as long as wide (6:6); median carina linear, covered with spiculæ.

Hemelytra with the hyaline membrane.

Abdomen as long as wide: AL-borders scarcely sinuated; PE-angles protruding, acute, directed somewhat backwards; Pe4 more protruding, acute; lateral angles forming an obtuse angle; PL-borders almost straight; posterior border slightly notched in the middle.

Legs: Fore-femora twice as long as wide, slightly inflated, disk with apiculæ, UBF denticulate.

Coloration: Pale yellow.

Female.—Total length, 7 mm; width of pronotum, 2.3 mm; width of abdomen, 3.4 mm.

Patria: Brazil.

Type: ♀, Brazil; deposited in the Natural History Museum, Vienna. I have not seen this species; the description is compiled from Handlirsch.

8. PHYMATA BEIERI sp. nov. Plate 4, figs. 41, 42, 43.

Female.—Elongate, narrow; body tapering from lateral angles of pronotum towards tip of head; from lateral angles of pronotum to third connexivum subparallel, then abruptly dilated, from lateral angles of abdomen ,also tapering backwards. Granulation of body on anterior half is dense and spiculiform, on posterior half less dense and subspiculiform, pleuræ and venter with few agglomerations of fine, rounded granulæ, paler than background.

Head much longer than wide across eyes (19:12); frontal processes fused into concave, anteriorly rounded plate, replete with spiculæ; ocellar processes acute, dentiform; proportions of antennal joints are: right antenna, 5:7:8: (fourth joint absent), left abnormal, 5:5.5:7:4.5 (fourth joint short and fusiform).

Pronotum almost as long as wide (25:26); anterior border slightly sinuated; anterior angles short, angular; ALA-borders slightly convex and provided with dense teeth and spiculæ; lateral notch shallow and less denticulated; ALP-borders slightly convex and granulated; lateral angles obtuse, marked only by a change of the level; PLA-borders straight; very short and subparallel posterior angles obtuse; fore disk inflated and with a median furrow, prolongated posteriorly on hind disk; granulation of hind disk spiculiform or rounded, dispersed, and paler than background; carinæ robust, straight, divergent backwards, and with rounded granulation.

Scutellum as long as wide (10:10); median carina linear, with erect spiculæ, the disk with lower spiculæ.

Hemelytra without granulation, only veins of corium with fine granulæ; membrane reddish-yellow.

Abdomen longer than wide (53:40); AL- and PL-borders slightly sinuated; lateral angles forming an obtuse angle; PE-angles protruding as fine teeth, Pe4 more protruding; exterior border of connexiva covered with spiculæ and rounded granulæ; discs of connexiva with sparse granulation, transversal band with dense; spiracles pale yellow, very protruding and conspicuous on darker background.

Pleuræ: Propleuræ with fore-border densely denticulated; AEP wide and deep, reaches to lateral notch.

Legs: Fore-femora rather flat, elongated (19:8.5); disk with dispersed granulation, more dense and erect laterally; UBF crenelated.

Coloration: Head, fore disk of pronotum, scutellum, whole ventral surface of body, and legs, ferrugineous; lateral borders of pronotum, connexivum, and coxæ whitish; transversal band of abdomen and tergum dark chestnut-brown; hind disk of pronotum in middle, pale ferrugineous.

Female.—Total length, 6.6 mm; width of pronotum, 1.6 mm; width of abdomen, 2.4 mm.

Holotype.—♀, Bolivia, Yungas de Coroico-Fassel coll; deposited in the Natural History Museum, Vienna.

Through the good offices of Dr. Max Beier, of the Natural History Museum in Vienna, I was able to examine a few types of Mayr and Handlirsch. It is a pleasure to dedicate this species to him.

P. beieri sp. nov. belongs to the "spinosissima group," but differs from all species of the latter by the very elongated body, by the spiculiform granulation restricted only at the fore half of the body, and other details.

9. PHYMATA SAOPAULOENSIS Hoberlandt, 1944. Plate 4, figs. 44, 45.

Phymata saopauloensis HOBERLANDT, Sbor. Ent. Odd. Zem. Mus., Praha 21–22 (1944) 425, fig. 2.

I have not seen this species, the description is compiled from Hoberlandt.

Female.—Head much longer than wide across eyes (18:12); frontal processes very strong and deeply notched, subparallel exteriorly; ocellar processes small, dentiform; fourth antennal joint fusiform, very short; the proportions are: 5:11:16:15.

Pronotum less long than wide (27:32); fore border widely and deeply sinuated; anterior angles dentiform forwards; ALA- and ALP-borders forming together a straight line; lateral notch absent; lateral angles rounded, together with PLA-borders and posterior angles forming a round, convex line; posterior processes big, dentiform, convergent; posterior border deeply sinuated; carinæ straight, divergent backwards.

Scutellum less long than wide (12:16); median carina linear, granulated.

Hemelytra clavus without granulation, corium with dispersed granulation; membrane copper-brown, shiny.

Abdomen with AL- and PL-borders regularly rounded, convex; lateral angles subtruncated; exterior borders of connexiva straight, PE-angles not protruding.

Body is covered with more or less spiculiform, setigerous granulation.

Legs: Fore-femora with setigerous spiculæ on disk.

Coloration: ferrugineous and brown.

Female.—Total length, 6.8 mm; width of abdomen, 3.25 mm.

Patria: Brazil (Sâo Paulo).

Type: ♀, Brazil, Sâo Paulo (*J. Mráz*). Deposited in the Zamalski Museum in Praha.

10. PHYMATA SCABROSA Handlirsch, 1897. Plate 4, figs. 46, 47.

Phymata scabrosa HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 177, Plate 4, fig. 8.

Phymata scabrosa KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 79, fig. 77.

Male.—Head much longer than wide across eyes (♂, 18:13; ♀, 19:13); frontal processes forked, dentiform, divergent; frontal plate covered with dense and erect, mostly setigerous, spines and spiculæ; preocellar processes fine, spiniform; ocellar processes bigger, also spiniform, rounded by 2 to 3 smaller spines; fourth antennal joint of males cylindrical; proportions are: ♂, 5:7:7:14; ♀, 5:7:8:12.

Head, body, and legs are covered with spines and spiculæ of different sizes, mostly setigerous, particularly long on head, pronotum, scutellum and connexivum.

Pronotum less long than wide (♂, 25:36; ♀, 30:35); foreborder widely sinuated; anterior angles spiniform, long and slightly divergent; ALA- and ALP-borders somewhat expanded, forming together a straight or almost straight line; lateral notch absent; lateral angles forming an obtuse angle, terminated with a stout spine; PLA-borders slightly convex, covered with various spiculæ and in middle with a stout spine; posterior angles rectangular, terminated with a stout spine; posterior processes with 4 to 5 spiculæ; fore disk covered with spines and spiculæ of different sizes; high straight carinæ, divergent backwards, covered with erect spiculæ, and with two (1 + 1) bigger spines on top.

Scutellum less long than wide (♂, 10 to 12; ♀, 11:13); median carina linear, low, marked with higher spines as on disk.

Hemelytra clavus and corium finely punctated and with dispersed spiculæ, those of veins higher; membrane brown (♂) or yellowish (♀).

Abdomen less long than wide (♂, 44:57; ♀, 53:72); AL-borders slightly sinuated, from fourth connexivum abruptly dilated; PE-angles terminated with long and strong spines, Pe4 in the form of an acute triangle; lateral angles forming a lobe with convex borders and obtusely angulated apex, terminated with a spine; PL-borders slightly sinuated in both sexes; posterior border in male truncated, in female rounded; transversal band with more dense spiculæ than other connexiva.

Pleuræ: Propleuræ and MM-pleuræ covered with spiculæ, more or less agglomerated; fore-border of propleuræ denticulated, AEP wide and deep smooth, not reaching lateral angles.

Legs: Fore-femora with spiculæ on disk; UBF denticulated; median and hind legs with various spines and spiculæ.

Coloration: Somewhat variable: ochraceous or pale yellow, sometimes whitish; males with lateral borders of head, hemelytra, transversal band abdomen, fore-femora and pygophoro somewhat darker.

Total length: ♂, 6.2; ♀, 6.9 mm; width of pronotum: ♂, 1.9; ♀, 2.0 mm; width of abdomen: ♂, 3.6, ♀, 4.5 mm.

Patria: Brazil (Mato Grosso), Venezuela, Argentina (Misiones, Corrientes, Formosa), Paraguay (Caa-Guazú), Bolivia (Santa Cruz).

Type: The cotype of Handlirsch are deposited in the National Museum of Natural History, Paris.

11. PHYMATA PHYLLOMORPHA Handlirsch, 1897.

Phymata phyllomorpha HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 176.

I have not seen this species, the description is compiled from Handlirsch without drawings.

Male.—Head twice as long as wide across the eyes; frontal processes strong, forked; preocellar and ocellar processes spiniform; the fourth antennal joint is slightly longer than the second and third together; head covered with spines.

Pronotum rather flat, almost as long as wide; ALA- and ALP-borders forming together a straight line, densely covered with setigerous spines; lateral notch absent; lateral angles not protruding; carinæ high, covered with setigerous spiculæ, with big tubercle on top.

Scutellum with acute apex; median carina linear, distinct.

Hemelytra corium with fine spiculæ; membrane partially anastomosed, fumigated.

Abdomen strongly dilated laterally; first three connexiva regularly dilated backwards, their outer borders denticulated, PE-angles terminated with strong spine; fourth connexivum abruptly dilated, obtusely notched apically, forming two angles; fifth and sixth connexiva widely sinuated; their outer borders denticulated (zackig); posterior border slightly notched; whole abdomen covered with dense spiculæ, and similar to a leaf of thistle.

Legs: Fore-femora twice as long as wide, covered with spiculæ.

Coloration: Pale grayish-yellow, corium brown, transversal band of the abdomen dark brown, fourth antennal joint, brown.

Male.—Total length, 7 mm.

Patria: Brazil (Sâo Paulo).

Type: ♂, Brazil, Sâo Paulo; deposited in the Natural History Museum, Vienna.

12. PHYMATA PERUENSIS Melin, 1930. Plate 4, figs. 48, 49.

Phymata peruensis MELIN, Ark. Zool. 22 (1930) 33, fig. 35.

Male.—Elongated, rather flat, covered with fine, rounded granulation, which is paler than the background.

Head much longer than wide across eyes (♂, 24:13; ♀, 6:14); frontal processes fused into a long, concave plate, slightly notched anteriorly, and laterally convex; ocellar processes very small, dentiform; proportions of antennal joints are: ♂, 3:7:8:14; ♀, 4:7:9:13.

Pronotum flat, less long than wide (♂, 25:31; ♀, 28:34); fore-border deeply (♂) or slightly (♀) sinuated; anterior angles dentiform, directed forwards (♂), or angular, less protruding (♀); ALA- and ALP-borders together forming a straight line, crenelated; lateral notch absent; lateral angles forming an obtuse angle, provided apically with a small tooth or tubercle; PLA-borders straight parallel or subparallel; posterior. angles obtuse, not protruding fore disk finel, pale, granulated; carinæ distinct, slightly divergent, anteriorly granulated.

Scutellum less long than wide (9:12); median carina linear, granulated, disk also granulated.

Hemelytra almost without granulation; membrane yellowish at the base fumigated (♂), or white hyaline (♀).

Abdomen longer than wide (♂, 49:45), or less long than wide (♀, 54:57); AL-borders slightly sinuated (♂), or straight (♀); lateral angles forming an obtuse angle; PL-borders straight (♂) or slightly convex (♀); PE-angles protruding, dentiform (♂), or tuberculiform (♀); Pe4 angulated; more protruding; posterior border rounded.

Pleuræ: Propleuræ densely granulated; fore-border finely denticulated; MM-pleuræ also granulated.

Legs: Fore-femora slightly inflated rather elongated (♂, 19:8; ♀, 22:9); disk without granulation; UBF crenelated.

Coloration: Ochre-testaceous and buff, partially darker; ventral surface yellow or yellowish; ALA-borders and sternum whitish.

Total length: ♂, 6.6; ♀, 7.3 mm; width of pronotum; ♂, 1.9; ♀, 2.1 mm; width of abdomen: ♂, 2.6; ♀, 3.5 mm.

Patria: Perú (Calanga, Marcapata).

Type: ♂, Perú, Calanga; deposited in the Natural Histon Museum, Stockholm.

Besides the type examined were the allotype (♀), collected with type, and 1 ♂ from Marcapata, deposited in the same museum. As can be seen from the description, the sexual dimorphism is rather pronounced.

13. PHYMATA ACUTA Stål, 1860. Plate 4, figs. 50, 51.

Phymata acuta STÅL, Bidr. till Rio Jan. trakt. Hem. fauna 1 (1860) 60.

Phymata acutangula HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 175.

Phymata longiceps MELIN (in partem), Ark. Zool. (2) 22 (1930) 32.

Phymata torresi KORMILEV (♂), Rev. Ent. Rio de Jan. 21 (1950) 588.

Male.—Elongated, abdomen moderately dilated laterally.

Head much longer than wide across eyes (21:13.5); frontal processes fused into an elongated, concave plate, slightly notched apically, convex laterally; ocellar processes small, dentiform, erect; proportions of antennal joints are: 5:7:–:– (the two apical absent); granulation of body fine, dense and paler than background.

Pronotum rather flat, hexagonal, less long than wide (20:37); ALA- and ALP-borders forming together a straight, crenelated line, scarcely sinuated before the lateral angles; lateral notch absent; lateral angles terminated with an acute, horizontal tooth; PLA-borders deeply sinuated; posterior angles angular, directed sideways; fore disk inflated and densely granulated; hind disk punctated and also densely granulated; carinæ slightly divergent backwards and granulated.

Scutellum less long than wide (10:13); median carina linear, granulated.

Hemelytra almost without granulation; membrane white, at base fumigated.

Abdomen less long than wide (50:53); AL-borders sinuated; lateral angles forming a slightly obtuse angle with an acute tip (Pe4); PE-angles small dentiform; PL-borders almost straight; posterior border rounded; connexiva granulated.

Pleuræ: Propleuræ with fine granulation; fore-border finely denticulated. MM-pleuræ granulated.

Legs: Fore-femora longer than wide (19:10); disk without granulation; UBF crenelated.

Coloration: Ochre-yellow, ventral surface and legs yellow; head, pronotum, and hemelytra partially darker, testaceous and brown; transversal band of abdomen brown.

Patria: Brazil (Estado Rio), Bolivia (ex-holotype of *P. torresi* Kormilev).

Type: Brazil, Rio de Janeiro; with labels: "acuta stål" and "acutangula det Handlirsch"; deposited in the Natural History Museum, Stockholm.

In 1860 Stål described three allied species from Rio de Janeiro: *Phymata longiceps, P. simulans,* and *P. acuta.* He himself was not sure, and supposed, that, perhaps, the two latter can be cospecific. Handlirsch [(1897) 175] has considered all these species as synonyms of *P. acutangula* Guérin from Cuba, though he has not seen the latter species. Melin, who has not seen also the genuine *P. acutangula* Guérin, has separated *P. longiceps* Stål from the former, because: "it is hardly probable that any species has such a wide range of distribution as from Cuba to Rio de Janeiro." The descriptions of Stål are too short to make recognition of these species possible. In 1950 Dr. S. C. Bruner, who then was in Las Vegas, Cuba, at my request sent me a specimen of *P. acutangula* Guérin, and I could see that it is not identical with the redescription and drawings by Melin of *P. longiceps* Stål [(1930) 32]. I could not examine at the time the types of Stål, so I could only work on the short descriptions of Stål and the redescription by Melin of *P. longiceps;* the latter had no doubt that all three species of Stål are cospecific, but I could not agree with him. Having some specimens of this group from Brazil, Paraguay, and North Argentina I then identified some as *P. longiceps* Stål, other as *P. simulans* Stål, revalidating the latter as a good species, and two specimens described as a new species *P. torresi* Kormilev, [(1950) 588]. Only after I have received the types of Stål, kindly sent by Dr. R. Malaise, I could see that I was also wrong, and could straighten the matter all three species of Stål are valid, and have nothing to do with *P. acutangula* Guérin, which belongs to a completely different group; the male of *P. torresi* Kormilev turned out to be *P.*

acuta Stål, and the female *P. longiceps* Stål; the specimens I previously identified as *P. longiceps* belong to *P. simulans*, and I must now separate the specimens previously identified as *P. simulans* into two subspecies of the latter, *P. simulans explanata* ssp. nov. and *P. simulans surinamensis* ssp. nov. One specimen from the Natural History Museum in Stockholm, female, bears the label or Stål: "Rio Jan" and "Stål," and a red label "allotypus," put probably later, perhaps by Melin, and put in the box after the type of "acuta." It was, therefore, supposed that it belongs to this species, but it is not *acuta*, it is *longiceps*. It is a pity that many big museums follow the bad practice of putting the label of identification only on the first specimen in the row, so that it is always possible that some specimens come to be displaced and, as a consequence, later misidentified.

14. PHYMATA LONGICEPS Stål, 1860. Plate 4, figs. 52, 53.

Phymata longiceps STÅL, Bidr. till Rio Jan. trakt. Hem. fauna 1 (1860) 59.

Phymata acutangula HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wein 12 (1897) 175.

Phymata longiceps MELIN (in partem), Ark. Zool. (2) 22 (1930) 32.

Phymata torresi KORMILEV (♀); Rev. Ent. Rio de Jan. 21 (1950) 588.

Female.—Head much longer than wide across eyes (25:14.5); frontal processes fused together into a concave plate, slightly notched anteriorly, laterally convex; ocellar processes very small, granulated; proportions of antennal joints are: 5:7:9:12.

Pronotum flat, less long than wide (28:36); fore-border slightly sinuated; anterior angles small, dentiform, directed forwards; ALA-borders forming a very obtuse angle, lateral notch shallow, rounded; ALP-borders straight; lateral angles forming an obtuse, horizontal angle; fore disk inflated and granulated; hind disk punctated and also granulated; carinæ slightly divergent backwards, granulated.

Scutellum less long than wide (9:14); disk slightly inflated and granulated; median carina linear, densely granulated.

Hemelytra without granulation; membrane yellowish, at base brown.

Abdomen less long than wide (60:63); AL- and PL-borders straight; lateral angles forming an obtuse angle; PE-angles scarcely protruding, angulated; Pe4 slightly more protruding; posterior border rounded.

Pleuræ: Propleuræ granulated, fore-border finely denticulated; AEP deep and narrow, slightly projecting beyond lateral notch; MM-pleuræ also granulated.

Legs: Fore-femora slightly inflated, longer than wide (22:11); disk without granulation; UBF crenelated.

Coloration: Ochre-yellowish; corium, clavus, venter and legs pale yellowish; transversal band of abdomen testaceous.

Female.—Total length, 7.4 mm; width of pronotum, 2.2 mm; width of abdomen, 3.9 mm.

Patria: Brazil (Estado Rio).

Type: ♀, Brazil, Rio de Janeiro; deposited in the Natural History Museum, Stockholm.

The males are yet unknown.

15. PHYMATA ROQUEENSIS Melin, 1930. Plate 4, figs. 54, 55.

Phymata roqueensis MELIN, Ark. Zool. (2) 22 (1930) 34, fig. 36.

Male.—Elongated, flat, with pale, dispersed granulated on darker background.

Head much longer than wide across eyes (25:16); frontal processes fused into a concave plate, raised and slightly notched anteriorly; ocellar processes very small, granulated; proportions of antennal joints are: 5:8:9:12.

Pronotum less long than wide (30:45); fore-border widely sinuated; anterior angles dentiform, slightly divergent; ALA-borders rounded, crenelated; lateral notch widĕ and deep, obtusely angulated; ALP-borders straight, crenelated; lateral angles dentiform, acute, directed obliquely sideways, maximal width of pronotum; PLA-borders deeply sinuated; posterior angles dentiform, directed sideways; fore disk with dispersed granulation; hind disk punctated and also with dispersed granulation; carinæ high, slightly divergent backwards, with somewhat obliterated granulation.

Scutellum less long than wide (11:15); median carina linear, granulated; disk with dispersed granulation; tip of scutellum protruding backwards.

Hemelytra anteriorly and posteriorly with dispersed granulation; membrane yellowish, at base fumigated.

Abdomen longer than wide (60:58); AL-borders slightly sinuated; PE-angles dentiform, directed slightly backwards; Pe4 acute, dentiform, also directed somewhat backwards; lateral angles forming an acute angle; transversal band of abdomen granulated, other connexiva without granulation.

Pleuræ: Propleuræ granulated, fore-border denticulated; MM-pleuræ also granulated.

Legs: Fore-femora longer than wide (22:11), slightly inflated, disk without granulation, UBF very finely crenelated.

Coloration: Ochre-brown, partially darker, sepia; ALA-borders and tip of medium carina of scutellum whitish; connexivum and ventral surface of body pale yellow; transversal band of abdomen and lateral bands of pronotum darker, brown to sepia; granulation of body whitish on darker background.

Male.—Total length, 7.7 mm; width or pronotum, 2.8 mm; width of abdomen, 3.6 mm.

Patria: Perú.

Type: ♂, Perú, Roque near Moyombaba, June 7 (*D. Melin*). Deposited in Natural History Museum, Stockholm.

PHYMATA ROQUEENSIS HALASZFYI ssp. nov. Palte 4, figs. 56, 57.

Male.—Very similar to the typical form, but frontal processes more raised anteriorly, in female almost vertical; lateral angles of pronotum less protruding, in female maximal width of pronotum across posterior angles; AL-borders of abdomen in both sexes more deeply sinuated; PE-angles more protruding and directed sideways; Pe4 more acute, particularly in male and directed outwards; PL-borders in male sinuated and in female straight. Coloration similar to typical form, but female paler.

Biometrical measures: head, ♂, 25:15; ♀, 29:17; pronotum: ♂, 29:39; ♀, 36:47; scutellum: ♂, 10:14; ♀, 12:15; abdomen: ♂, 56:63; ♀, 66:88; fore-femora: ♂, 22:11; ♀, 25:12.5; proportions of antennal joints are: ♂, 5:8:10:15; ♀, 6:10:11:15.

Total length: ♂, 7.4; ♀, 8.9 mm; width of pronotum: ♂, 2.3; ♀, 2.8 mm; width of abdomen: ♂, 3.7; ♀, 5.3 mm.

Patria: Perú.

Holotype.—♂, Perú, Calanga; deposited in the Hungarian National Museum, Budapest.

Allotype.—♀, Perú, Marcapata; deposited in the same collection. Through the good offices of Dr. Eva Halazzfy, keeper of the Department of Zoology at the Hungarian National Museum, I was able to examine the types of Dudich and Horváth. It is a pleasure to dedicate this subspecies to her.

Both these specimens were identified as *Phymata acutangula* Guérin, probably by Dudich.

16. PHYMATA VIANAI Kormilev, 1950. Plate 4, figs. 58, 59.

Phymata vianai KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 587.
Phymata vianai KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 80, fig. 3.

Male.—Head much longer than wide across eyes (22:15); frontal processes fused together into a plate, slightly notched anteriorly, directed forwards, convex laterally; ocellar processes small, dentiform; proportions of antennal joints are: 4:7:8:15.

Pronotum less long than wide (28:42); fore-border deeply sinuated; anterior angles dentiform, directed forwards; ALA-borders scarcely convex, crenelated; lateral notch small and shallow; ALP-borders scarcely convex, crenelated; lateral angles slightly raised, forming an obtuse angle, but tip angulated; PLA-borders are short and deeply sinuated; posterior angles strong, dentiform, directed sideways, maximal width of pronotum; fore disk finely granulated; hind disk roughly punctated anteriorly and with a few granulæ; carinæ divergent backwards, granulated anteriorly.

Scutellum less long than wide (12:15); median carina linear, densely granulated, the disk less granulated.

Hemelytra without granulation; membrane hyaline, anteriorly fumigated.

Abdomen less long than wide (59:67); AL-borders almost straight, from the fourth connexivum abruptly dilated; PE-angles angular, slightly protruding; Pe4 more protruding, slightly acute; lateral angles subrectangular; PL-borders straight; posterior border rounded; connexivum granulated.

Pleuræ: Propleuræ densely granulated; fore-border denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ also granulated.

Legs: Fore-femora longer than wide (22:11), somewhat inflated, but without granulation; UBF crenelated.

Coloration: Ochre-yellowish to pale testaceous and buff; ALA-borders yellow; lateral notch whitish; transversal band of abdomen variegated testaceous, brown and ochraceous; lateral bands of pronotum brown; ventral surface of body yellow and ochraceous.

Male.—Total length, 6.1 mm; width of pronotum, 2.2 mm; width of abdomen, 3.3 mm.

Patria: Argentina (Misiones).

Type: ♂, Argentina, Misiones, to Conception, Santa Maria (*M. J. Viana*). Deposited in the Argentina Natural Science Museum, Buenos Aires.

17. PHYMATA SIMULANS Stal, 1860. Plate 5, figs. 60, 61.

Phymata simulans STÅL, Bidr. till Rio Jan. trakt. Hem. fauna 1 (1860) 59.

Phymata simulans STÅL, Enum. Hem. 5 (1876) 133.

Phymata acutangula HANDLIRSCH (nec Guérin) (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 175.

Phymata longiceps MELIN (in partem), Ark. Zool. (2) 22 (1930) 32.

Phymata longiceps KORMILEV (nec Stål), Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 76.

Phymata simulans Stål is a big superspecies or a conglomerate of few allied species and subspecies, distributed from North Argentina to Central America. The species *P. longiceps* Stål, *P. acuta* Stål, *P. lindigiana* Melin, *P. ampliata* sp. nov., and *P. centralis* sp. nov. are very allied to it, and perhaps, if more material will be available, should be considered only as the subspecies of *P. simulans* Stål. I prefer to leave them as species.

I have separated now three subspecies: *explanata* ssp. nov., *recifensis* ssp. nov., and *surinamensis* ssp. nov.; the specimen illustrated by Handlirsch as *P. acutangula* (Plate 4, fig. 6) is probably one more subspecies, and the drawing of Champion of *P. acutangula* in Biologia Central Americana, probably is another subspecies. *P. simulans recifensis* ssp. nov. is less allied to *simulans* than all other mentioned subspecies, and probably will be separated as a species, but provisorily I leave it as a subspecies.

Male.—Elongated, but less flat than longiceps Stål.

Head much longer than wide across eyes (19:13); frontal processes fused in a plate, strongly depressed, scarcely notched anteriorly, laterally convex; ocellar processes small, dentiform; proportions of antennal joints are: 5:7:8:14.

Pronotum less long than wide (23:34); fore-border strongly sinuated; anterior angles dentiform and slightly divergent; ALA-borders subangulated and crenelated; lateral notch wide and shallow, subangulate; ALP-borders slightly rounded; lateral angles elevated, forming a slightly obtuse angle; PLA-borders slightly sinuated; posterior angles angulated, protruding sideways; fore disk granulated; hind disk punctated; carinæ divergent backwards anteriorly granulated.

Scutellum less long than wide (8:12); median carina linear, densely granulated; disk with sparse granulation.

Hemelytra without granulation; membrane hyaline.

Abdomen less long than wide (48:52); AL-borders deeply sinuated in a continuous line; lateral angles rectangular, protruding sideways; PE-angles small, dentiform, slightly protruding; Pe4 more protruding, but its tip is obtuse; PL-borders angularly notched; posterior border widely rounded.

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP wide and deep, almost reaching lateral angles; MM-pleuræ granulated.

Legs: Fore-femora slightly inflated, longer than wide (19:9); disk without granulation; UBF finely crenelated.

Coloration: Rather variable: brown to testaceous with yellow.

Female.—Similar to the male but bigger; frontal processes more deeply notched; AL-borders of the abdomen less sinuated; lateral angles of the same rectangular; PL-borders sinuated, not angularly notched; coloration paler. Biometrical measures: head, 22:13; pronotum, 28:40; acutellum, 8:12; abdomen, 53:66; fore-femora, 20:10; proportions of antennal joints are: 4:7:8:10.

Total length: ♂, 6.1; ♀, 6.9 mm; width of pronotum, ♂, 2.1; ♀, 2.4 mm; width of abdomen, ♂, 3.2; ♀, 3.9 mm.

Patria: Brazil (Rio de Janeiro, Santa Catarina).

Type: ♂, Brazil, Rio de Janeiro; deposited in the Natural History Museum, Stockholm.

PHYMATA SIMULANS EXPLANATA sp. nov. Plate 5, figs. 62, 63.

Phymata acutangula PENNINGTON (nec Guérin), Physis 5 (1919) 525, Plate 1, fig. 7; Plate 2, fig. 24.

Phymata acutangula PENNINGTON (nec Guérin), Lista Hem. Het. Rep. Arg. 2 (1921) 21.

Phymata acutangula, JENSEN-HAARUP (nec Guérin); Saert, Ent. Medd. 14 (1922) 6.

Phymata simulans KORMILEV (nec Stål), Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 76, figs. 78, 79.

Male.—Head longer than wide across eyes (♂, 19.5:13; ♀, 20:13); frontal processes fused into a plate, more or less deeply notched apically, rounded laterally; ocellar processes small, dentiform; proportions of antennal joints are: ♂, 4:6:7:12; ♀, 4:6:7:11.

Pronotum less long than wide (♂, 26:42; ♀, 29:41); anterior angles small, dentiform, slightly divergent; ALA-borders subangulated, convex, forming a very obtuse angle; lateral notch wide, moderately deep, rounded; ALP-borders rounded; lateral angles raised, terminated with a small tooth, slightly inclined sideways; PLA-borders moderately sinuated; posterior angles small, directed out and backwards; fore disk with sparse granulation; hind disk without granulation; carinæ divergent backwards, granulated anteriorly.

Abdomen less long than wide (♂, 49:69; ♀, 56:70); AL-borders slightly sinuated, from the fourth connexivum abruptly dilated and convex; PE-angles small, dentiform; lateral angles acute (♂) or rectangular (♀), tip somewhat obtuse; PL-borders concave, angularly notched (♂) or slightly sinuated (♀).

Coloration: ♂, head partially, pronotum, scutellum, transversal bands of hemelytra, and MM-pleuræ testaceous; lateral bands of head, lateral bands of pronotum, transversal band of abdomen, and propleuræ partially, are piceous; the fourth connexivum with two small, whitish spots; the rest of body and legs yellow. ♀, paler, testaceous, buff, and yellow.

Total length: ♂, 6.2; ♀, 7.0 mm; width of pronotum: ♂, 2.5; ♀, 2.4 mm; width of abdomen: ♂, 4.2; ♀, 4.3 mm.

Patria: Argentina (Misiones, Chaco, Formosa), Paraguay, Brazil (Rio Grande do Sul).

Holotype.—♂, Argentina, Misiones, Loreto, May, 1936 (*J. M. Bosq*). Deposited in the collection of the author.

Allotype.—♀, Argentina, Misiones, Iguazú; deposited in the Institute of Natural Science in San Miguel, Buenos Aires province.

Paratypes.—1 ♀ collected with the holotype, 1 ♀, Argentina, Misiones, Ignazú, and 1 ♀, Paraguay, Paso Yobai, all in the collections of the author; 1 ♀, Paraguay, in the Hungarian National Museum, Budapest.

PHYMATA SIMULANS SURINAMENSIS ssp. nov. Plate 5, figs. 64, 65, 66.

Male.—Similar to *explanata,* but frontal processes much longer, laterally straight, parallel, very acute and deeply notched anterorly, anterior angles of pronotum longer, dentiform; lateral angles of the same more raised and terminated with a longer tooth; posterior angles more protruding, acute; exterior borders of the fourth connexivum more convex; pygophore more elongated; coloration darker; piceous and ferrugineous with bright yellow.

Biometrical measures: head, 22:13; pronotum, 26:42; scutellum, 9:13; abdomen, 50:72; fore-femora, 20: 10.5; proportions of antennal joints are: 4:8:7.5:15.

Male.—Total length, 6.5 mm; width of pronotum, 2.6 mm; width of abdomen, 4.3 mm.

Patria: Dutch Guiana.

Holotype.—♂, Surinam, Nickerie, Naunikreekdam, February 12, 1942 (*Geiskel*). Deposited in the collection of Dr. P. Wygodzinsky, Tucumán, Argentina.

PHYMATA SIMULANS RECIFENSIS ssp. nov. Plate 5, figs. 67, 68, 69.

Male.—Small, with the short abdomen, strongly dilated laterally.

Head much longer than wide across eyes (♂, 18:12; ♀, 18:11); frontal processes strong, acute, deeply notched anteriorly, directed forwards; ocellar processes strong, dentiform, inclined forwards; proportions of antennal joints are: ♂, 3.5: 6:7:13; ♀, 4:7:8:10.

Pronotum less long than wide (♂, 22:36; ♀, 22:33); anterior angles long, dentiform, directed forwards; ALA-borders distinctly angulated, forming an obtuse angle; lateral notch big, angulated; ALP-borders slightly convex, rounded, lateral angles raised, tip produced in an acute tooth, inclined sideways, in female somewhat shorter; PLA-borders sinuated; posterior angles small, directed sideways, lateral borders from anterior to lateral angles finely denticulated; fore disk granulated; hind disk almost without granulation; carinæ fine, divergent backwards, granulated anteriorly.

Scutellum less long than wide (8:11); median carina linear, densely granulated, disk also granulated.

Hemelytra with fine and sparse granulation; membrane hyaline, at base brownish.

Abdomen AL-borders slightly sinuated, from third connexivum abruptly dilated; PE-angles small, dentiform; lateral angles horizontal, protruding sideways as a very acute angle; PL-borders angularly notched (♂) or almost straight (♀); transversal band of abdomen with sparse granulation; exterior borders particularly of the fourth connexiva, are finely crenelated.

Pleuræ: Propleuræ densely granulated; fore-border crenelated, denticulated inferiorly, AEP wide and deep, slightly projecting beyond lateral notch; MM-pleuræ granulated.

Legs: Fore-femora inflated, disk without granulation; UBF crenelated.

Coloration: Buff and ochre-yellow; ALA-borders whitish; transversal band of the hemelytra yellowish; that of abdomen ferrugineous, on fourth connexivum with a white spot; lateral bands of pronotum brown.

Total length: ♂, 5.3; ♀, 5.9 mm; width of pronotum: ♂, 2.2; ♀, 2.0 mm; width of abdomen: ♂, 3.9; ♀, 4.0 mm.

Patria: Brazil (Recife).

Holotype.—♂, Brazil, Recife (*M. Schucht*). Deposited in the collection of the author.

Allo- and paratype, ♀, and ♂, collected with the holotype; deposited in the collection of Dr. P. Wygodzinsky, Tucumán, Argentina.

Phymata simulans recifensis ssp. nov. is somewhat similar to *P. lindigiana* Melin, but the general type of the head and particularly of the abdomen is more allied to *simulans* than to *lindigiana*.

18. PHYMATA LINDIGIANA Melin, 1930. Plate 5, figs. 70, 71.

Phymata lindigiana MELIN, Ark. Zool. (2) 22 (1930) 33, fig. 34.

Male.—Small; lateral angles of pronotum in male produced into long spines, in female less so; abdomen in both sexes strongly dilated, forming an acute angle, protruding sideways.

Head much longer than wide across eyes (♂, 19:13; ♀, 20:13); frontal processes elevated anteriorly, before tip constricted, divergent and distinctly notched apically; ocellar processes small, dentiform; proportions of antennal joints are: ♂, 4:6:7:14; ♀, 4:5:8:10.

Pronotum less long than wide (♂, 22:34; ♀, 24:31); fore-border widely sinuated; anterior angles angular, directed forwards; ALA-borders subangulated, forming a very obtuse angle; lateral notch wide, shallow, rounded; ALP-borders straight; lateral angles produced in long spines, somewhat shorter in females, directed obliquely sideways; PLA-borders deeply sinuated and convergent backwards; posterior angles small, directed sideways; fore disk finely granulated; hind disk deeply punctated, scabrous, but almost without granulation; carinæ slightly divergent backwards, granulated anteriorly.

Scutellum less long than wide (8:12); medium carina linear, densely granulated; disk less granulated.

Hemelytra without granulation; membrane hyaline, at base piceous.

Abdomen AL-borders deeply sinuated, from fourth connexivum slightly convex; PE-angles small, tuberculiform; Pe4 protruding acute; lateral angles forming an acute angle; PL-borders scarcely sinuated; posterior border rounded.

Pleuræ: Propleuræ granulated; fore-border finely denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora slightly inflated, without granulation; UBF crenelated.

Coloration: Head black, hind and inferior borders brown; pronotum black with anterior angles and granulation brown; lateral notch pale yellow; scutellum brown; hemelytra pale yellow with a broad band along interior border brown; abdomen pale yellow, transversal band black or piceous; ventral surface of body yellow; AEP black, lateral angles of abdomen brown. Females slightly paler.

Total length: ♂, 5.7; ♀, mm; width of pronotum; ♂, 2.0; ♀, 1.9 mm; width of abdomen: ♂, 3.2; ♀, 4.1 mm.

Patria: Colombia, Venezuela, Costa Rica.

Type: ♂, Colombia, Bogotá (*Lindig*). Deposited in the Natural History Museum, Stockholm.

Examined specimens: Besides the type, allo- and paratype, ♀ and ♂, collected with the holotype, in the same museum; 1 ♂, Venezuela, Miranda (Caracas to El Sombrero), September 9 to 12, 1927 (*E. Holt*). In the U. S. National Museum, Washington; 1 ♂ and 1 ♀, Colombia, Aracataca (Ujhelyi). 1 ♂ and 1 ♀, Costa Rica, in the Hungarian National Museum, Budapest; 1 ♂, Waldeck-Farm near Matina (Reimoser). In Natural History Museum, Vienna.

19. PHYMATA AMPLIATA sp. nov. Plate 5, figs. 72, 73, 74.

Female.—Head much longer than wide across eyes (24:15); frontal processes fused into a concave plate, slightly notched anteriorly, rounded laterally; ocellar processes small, dentiform; proportions of antennal joints are: 4:8:10:13.

Pronotum less long than wide (32:40); fore-border deeply sinuated; anterior angles small, dentiform, directed forwards; ALA-borders scarcely convex, rounded and crenelated; lateral notch moderately sinuated; ALP-borders almost straight, scarcely convex, crenelated; lateral angles low, forming an obtuse angle, but tip sharply angulated (maximal width of pronotum); PLA-borders short and almost straight; posterior angles obtusely angulated, apically blunt; fore disk slightly inflated and granulated; hind disk without granulation; carinæ slightly divergent backwards, anteriorly with sparse granulation.

Scutellum less long than wide (9:15); median carina linear, somewhat obliterated, finely granulated; disk with fine granulation.

Hemelytra at the base and apex with sparse granulation; membrane yellow, at base brownish.

Abdomen: AL-borders deeply and PL-borders slightly sinuated; the former from connexivum IV abruptly dilated and convex; PE-angles very small, tuberculiform; Pe4 protruding as an acute angle; lateral angles forming an acute angle; connexivum finely granulated.

Pleuræ: Propleuræ with dispersed granulation; fore-border finely denticulated; AEP wide and deep, reaching lateral notch, then is narrowed and reaching lateral angles; MM-pleuræ also granulated.

Coloration: Ochre-yellowish; ALA-borders yellow; hemelytra at the base and apex brownish; transversal band of abdomen reddish-brown; lateral angles of the same, on ventral surface roseate.

Female.—Total length, 7.7 mm; width of pronotum, 2.4 mm; width of abdomen, 4.5 mm.

Patria: Paraguay, Brazil.

Holotype.—♀, Paraguay, San Estanislao (*Rev. G. J. Williner, S. J.*) [ex allotype of *phymata vianai* Kormilev (1950)]. Deposited in the Institute of Natural Sciences in Buenos Aires Province, Argentina.

Allotype.—♂, Brazil Mato Groso, Corumba; deposited in the U. S. National Museum, Washington.

This species is very allied to *P. vianai* Kormilev (1950) but differs from it by the following: the posterior angles of the pronotum are obtuse, almost rounded; AL-borders of the pronotum deeply sinuated, also in the female, and other details.

20. PHYMATA CENTRALIS sp. nov. Plate 5, figs. 75, 76, 77.

Female.—Similar to *P. ampliata* sp. nov., but smaller; lateral angles of pronotum more raised: posterior border of same angularly cut but (slightly sinuated in *P. ampliata*); AL-borders of abdomen more deeply sinuated the connexivum IV much more protruding laterally, but not abruptly dilated; forming with the first three connexiva a continuous line; lateral angles acute; Pe4 also acute and more protruding than in *ampliata.*

Coloration darker: head on dorsal surface, and upper border of lateral surface, the fourth antennal joint, posterior disk of pronotum, lateral angles of pronotum and abdomen, and transversal band of latter, black or piceous; lateral bands of pronotum brown; clavus and tip of corium dark brown; fore disk of pronotum and scutellum testaceous; membrane pale yellow; at base brown.

Biometrical measures: head, 20:14; pronotum, 28:36; abdomen, 60:77; fore-femora 20:9.5, and proportion of antennal joints are: 4:8:9:12.

Female.—Total length, 7.2 mm; width of pronotum, 2.1 mm; width of abdomen, 4.7 mm.

Patria: Panama.

Holotype.—♀, Panama, Canal Zone, July 12, 1952, on *Citrus*. Deposited in the U. S. National Museum, Washington.

I would consider this species only as a subspecies of *P. ampliata* sp. nov. for the discontinuity and remoteness of the distributional areas.

21. PHYMATA HUSSEYI Kormilev, 1951. Plate 5, figs. 78, 79.

Phymata husseyi KORMILEV, An. Soc. Cient. Arg. 152 (1951) 176, fig. 4.

Male.—Had longer than wide across eyes (26:21); frontal processes robust, tapering towards tip, bent downwards and divergent, slightly projected beyond tip of first antennal joint, similar to a beak; ocellar processes low and blunt; proportions of antennal joints are: 4:10:4:31, the fourth segment is long, cylindrical, and curved.

Pronotum hexagonal; fore-border scarcely sinuated; posterior border truncated; anterior angles not projecting beyond the fore-border; ALA- and ALP-borders forming together an almost straight line; lateral notch absent; lateral angles horizontal, rectangular, but tip slightly acute; PLA- and PLP-borders deeply sinuated, forming together an undulated line; posterior angles blunt, but sharply delimited; fore disk finely granulated; hind deeply punctated; carinæ parallel, posteriorly evanescent.

Scutellum less long than wide; disk inflated with median carina; linear, low, marked only by granulation.

Hemelytra with fine and sparse granulation; membrane brown.

Abdomen longer than wide (72:68); AL-borders very long, deeply sinuated in a continuous line, basally subparallel, then divergent; PL-borders and posterior border forming together an ample arch; maximal width of abdomen, across lateral angles, situated at two-thirds of its length.

Legs: Fore-femora much longer than wide, disk without granulation; UBF crenelated.

Coloration: Head, fore disk of pronotum, and ventral surface of body, testaceous; lateral surfaces of head and occiput black; fourth antennal joint, and lateral bands of pronotum piceous; hind disk of pronotum, scutellum, and abdomen on dorsal surface, pale testaceous; corium grayish brown.

Male.—Total length, 5.8 mm; width of pronotum, 2.2 mm; width of abdomen, 2.7 mm.

Patria: Paraguay.

Type: ♂, Paraguay, Caa-Guazú, November 24, 1931 (*Dr. R. F. Hussey*). Deposited in the collection of Dr. R. F. Hussey, Gainsville, Fla., U.S.A.

This singular species is not much allied to any other species in the genus.

22. PHYMATA SWEDERI Stål, 1860. Plate 5, figs. 80, 82.

Phymata swederi Stål, Bidr, till Rio Jan. trakt. Hem. fauna 1 (1860) 60.

Phymata swederi Stål, Enum. Hem. 5 (1876) 134.

Phymata swederi Handlirsch, Ann. Nat. Hofmus., Wien 12 (1897) Plate 4, fig. 7.

Male.—Head longer than wide across eyes (19:15); frontal processes fused together in a horizontal plate, rounded anteriorly, and scarcely notched; ocellar processes not developed, only slightly inflated; proportions of antennal joints are: 4:7:5:30, the fourth joint long, cylindrical, and slightly curved.

Pronotum less long than wide (29:50); fore-border deeply sinuated; anterior angles triangular, acute, directed forwards; ALA-borders straight, crenelated, with ALP-borders forming a very obtuse angle, almost a slightly sinuated line; lateral notch absent; lateral angles subrectangular, directed sideways, tip blunt; posterior angles marked only by a small and blunt tooth, directed sideways; posterior processes absent; posterior border slightly convex, rounded; fore disk with fine and sparse granulation; hind disk finely punctated and granulated; carinæ fine, slightly obliterated posteriorly, divergent backwards, granulated anteriorly.

Scutellum less long than wide (10:15); disk inflated; median carina linear marked only by granulation.

Hemelytra without granulation; membrane shiny, copper-brown.

Abdomen longer than wide (62:53); AL- and PL-borders almost straight, lateral angles very obtuse, almost rounded; PE-angles scarcely protruding; Pe4 more protruding.

Pleuræ: Propleuræ almost without granulation; fore-border without granulation, only at the inferior angle with two big teeth; AEP wide and deep, reaching posterior angles, but not separated from disk; MM-pleuræ without granulation, only inferior border of mesopleuræ has strong, ivory granulation.

Legs: Fore-femora at base very narrow, then abruptly dilated; disk inflated and with very fine granulation along superior border; UBF roughly crenelated.

Coloration: Reddish-brown; head, first three antennal joints, fore disk entire and hind disk of pronotum in middle, connexiva, ventral surface of body, and legs, yellow-brown; lateral bands of pronotum and transversal band of abdomen dark reddish-brown.

Male.—Total length, 7.0 mm; width of pronotum, 3.0 mm; width of abdomen, 3.14 mm.

Patria: Brazil (Rio de Janeiro).

Type: ♂, Brazil, Rio de Janeiro. Deposited in the Natural History Museum, Stockholm.

23. PHYMATA INTEGRA Westwood, 1843. Plate 5, figs. 83, 84, 85.

Phymata integra WESTWOOD, Trans. Ent. Soc. Lond. 3 (1843) 22, Plate 2, fig. 1.

Phymata, integra HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 158, Plate 5, fig. 2.

Female.—Head less long than wide across eyes (14:15); frontal processes very short, not reaching either clypeus or tip of first antennal joint; ocellar processes small, dentiform, apically blunt; antennal excavations open from above in middle and posteriorly; proportions of antennal joints are: 4:7:8:16; in male fourth antennal joint should be very long, cylindrical and slightly curved.

Pronotum almost as long as wide (42:43); fore border widely notched; anterior angles angular, robust, short, directed forwards; ALA- and ALP-borders forming together an undulated, inflated, and bluntly crenelated line: lateral notch very small, and shallow; lateral angles only marked as small angular projections; PLA-borders scarcely sinuated; posterior angles robust, rectangular, directed sideways, the maximal width of pronotum; posterior processes scarcely marked; posterior border truncated; fore disk anteriorly plane, with two (1 + 1) elevations posteriorly, and with a deep pit on median line; without granulation, only "chagrine"; posterior disk strongly punctated; carinæ robust and divergent backwards, with sparse and somewhat obliterated granulation.

Scutellum less long than wide (9:14); median carina at base robust and high, towards tip lower and narrower, with obliterated granulation.

Hemelytra without granulation; membrane gray.

Abdomen very big (69:80); lateral borders convex, almost rounded; PE-angles scarcely protruding; Pe4 protrude as an acute angle with a blunt tip; lateral angles forming a very obtuse angle, almost rounded.

Pleuræ: Propleuræ without granulation; fore-border granulated, but not denticulated; AEP wide and deep, reaching lateral angles; MM-pleuræ granulated only at periphery.

Legs: Fore-femora very big, inflated (25:15), without granulation; UBF at base with a few big granulæ.

Coloration: Ochre-gray; antennæ and lateral borders of abdomen bicolor: yellowish and brown.

Female.—Total length, 11.28 mm; width of pronotum, 4.1 mm; width of abdomen, 7.6 mm.

Patria: Brazil.

Type: ♀, patria ignota; deposited in the Nationl Museum, Paris; but there are three females more known, all from Brazil, males are yet unknown.

24. PHYMATA RETICULATA Handlirsch, 1897. Plate 6, figs. 86, 87.

Phymata reticulata HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 152, Plate 8, fig. 3.

The type of *P. reticulata*, formerly deposited in the National Museum of Natural History in Paris, is lost. The description compiled from the description of Handlirsch is rather poor.

Head and antennæ similar to *P. annilipes* Stål (1862) fourth joint of latter is twice as long as the second and third together; pronotum also similar, but the carinæ of hind lobe somewhat less protruding; corium without granulation; membrane dark brown, in the middle with two pale spots, veins completely anastomosed; abdomen similar to *P. annulipes*, but the fourth connexivum differently shaped: first lobe not so long and cut out, middle lobe longer and directed more backwards, hind lobe scarcely marked; venter, pleuræ and legs almost as in *P. annulipes*, latter also with dark rings; coloration somewhat paler. Principal difference with the *P. annulipes* is the densely anastomosed membrane, and the fourth connexivum.

Male.—Total length, 8.5 mm.

Patria: Colombia.

Type: ♂, Colombia, Bogota—lost.

25. PHYMATA ANNULIPES Stål, 1862. Plate 6, figs. 88-92.

Phymata annulipes STÅL, Stett. Ent. Zeit. 23 (1862) 439.

Phymata annulipes STÅL, Enum. Hem. 5 (1876) 132.

Phymata annulipes HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 151, Plate 8, fig. 1.

Phymata annulipes CHAMPION, Biol. Centr. Amer., Rhynch. 2 (1898) 53.

The single known specimen of this species is male, the type of Stål, but I was able to examine only two females, also from Mexico, one of which I describe further below.

Female.—Head small and short, as long as wide across the eyes (19:19); frontal processes stout, short, forked and directed upwards; ocellar processes stout, dentiform, apically blunt and directed up and sideways; proportions of antennal joints are: 5:9:11:16, fourth joint fusiform. Handlirsch noted for male that the fourth joint is twice as long as the second and third together; granulation of head and body smooth, ivory, similar to the frozen drops.

Pronotum less long than wide (43:49); fore-border deeply sinuated; anterior angles stout, angular, directed forwards; ALA-borders very convex, rounded, inflated, reborded and provided with a dense granulation, granulæ being of different size; lateral notch angulated, obtuse; ALP-borders convex, rounded, reborded and granulated; lateral angles marked only as a stout tooth; ALP and PLA-borders forming together an angle of about 135°; PLA-borders short, horizontal, reborded and granulated; posterior angles not protruding, forming a slightly obtuse angle, maximal width of pronotum; PLP-borders reborded, but without granulation; fore disk inflated, anteriorly in middle with an inverted, smooth triangle, laterally of it, and particularly on hind border, with stout granulation; hind disk inflated, anterior and posteriorly declivous, without granulation; carinæ stout and high, densely granulated, anteriorly parallel, then divergent; at base, on posterior border of fore disk, provided with two (1 + 1) stout tubercles.

Scutellum moderately big (12:17); median carina sublinear, its longitudinal ridge stout, high, and densely granulated.

Hemelytra: With sparse and somewhat obliterated granulation; membrane yellow-brown, or sometimes white, hyaline, partially anastomosed.

Abdomen elongated, less long than wide (70:74); AL-borders regularly divergent backwards, from the fourth connexivum abruptly dilated and subvertical; fourth connexivum provided with ultraconnexivum, latter forms three lobes: middle lobe longest, hind lobe lowest; lateral angles forming a right angle; PE-angles protruding as tubercles, Pe3 bigger than two first; the fifth connexivum distinctly sinuated, anterior and posteriorly provided with a tubercle; posterior border rounded.

Pleuræ: Propleuræ above and below of AEP, and at fore-border densely granulated, on disk with sparse granulation; AEP wide and deep, reaches to lateral notch; fore-border granulated, and provided with stout, blunt teeth; MM-pleuræ granulated only at the periphery.

Legs: Fore-femora big and rather flat (28:20) disk without granulation; UBF roughly crenelated.

Coloration: Yellow to orange; corium interiorly transversal band of abdomen and fore-femora darker, yellow-brown; carinæ of pronotum and stridulatory groove of prosternum whitish; middle and hind femora with dark rings. Handlirsch indicates for the type color: dirty-brown; head, thorax, base and tip of abdomen darker; connexivum bicolor; middle and hind legs with brown rings.

Female.—Total length, 9.0 mm; width of pronotum, 3 mm; width of abdomen, 4.5 mm.

Male.—Total length, 8 mm.

Patria: Mexico.

Type: ♂, Mexico; deposited in the Natural History Museum, Vienna.

Allotype.—♀, Mexico Cuernavaca, November, 1944 (*N. L. H. Krausso*), on *Eupatorium adenophorum.* Deposited in the U. S. National Museum, Washington.

26. PHYMATA VENEZUELANA Kormilev, 1950. Plate 6, figs. 93-96.

Phymata venezuelana KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 589.

Male.—Head very short, less long than wide across the eyes (17:18); frontal processes long, dentiform, directed up and sideways; preocellar processes distinct, granulated; ocellar processes dentiform, without granulation; the proportions of antennal joints are: ♂, 5:7.5:6.5:27; ♀, 5:6:8:15; fourth joint of male is long, cylindrical.

Pronotum less long than wide (38:46); anterior border deeply sinuated; anterior angles stout, angular, directed forwards; ALA-borders convex, rounded, reborded and granulated; lateral notch wide and shallow; ALP-borders straight, crenelated; lateral angles dentiform, pointed, subvertical; PLA-borders sinuated; whole lateral borders from anterior to posterior angles inflated, reborded, and covered with granulæ of different sizes; fore disk inflated, anteriorly in middle with an inverted, smooth triangle, laterally of it, and on posterior border, covered with granulæ of different sizes; posterior disk punctated but without granulation; carinæ high and granulated, anteriorly parallel, then divergent, at base with two (1 + 1) high tubercles.

Scutellum less long than wide (11:17); disk without granulation; median carina linear, high, granulated.

Hemelytra almost without granulation; membrane brown, partially anastomosed.

Abdomen long, almost as long as wide (66:67); AL-borders regularly divergent backwards, from fourth connexivum abruptly dilated and subvertical; PE-angles dentiform, protruding; fourth connexivum provided with an ultraconnexivum, which forms three lobes; middle is long and acute, fore and hind lobes low and blunt, subequal in length; fifth connexivum anteriorly and posteriorly protruding, in middle sinuated; hind border rounded.

Pleuræ: Propleuræ granulated, fore-border with various granulæ and short teeth, at inferior angle with a stout tooth; AEP wide and deep, reaches to lateral notch; MM-pleuræ with fine and dispersed granulation, and a few bigger granulæ.

Legs: Fore-femora big and rather flat, similar to *P. annulipes;* disk without granulation; UBF crenelated.

Coloration: Ochre-brown or ochre-gray; head, fore disk of pronotum, fore femora middle and posterior femora partially, and venter also partially, piceous; hemelytra brown, transversal band of the same paler; connexiva with dark spots; middle and hind femora and tibiæ, each with two dark rings.

Total length: ♂, 8.2; ♀, 8.6 mm; width of pronotum: ♂, 3.0; ♀, 2.9 mm; width of abdomen: ♂, 4.4; ♀, 5.0 mm.

Patria: Venezuela.

Type: ♂, Venezuela, El Valle, September, 1942 (*C. H. Ballou Axo*). Deposited in the U. S. National Museum, Washington.

27. PHYMATA LACINIATA Handlirsch, 1897. **Plate 6, figs. 97, 98.**

Phymata laciniata HANDLIRSCH, Ann. Naturh. Hofmus. Wien 12 (1897) 153, Plate 8, fig. 2.

Only two male specimens, were known. I could not examine the cotypes of Handlirsch, so the following description is compiled from his work.

Male.—Head, similar to *P. annulipes* Stål (1862), 4th antennal joint less long, only one and two-thirds times as long as the second and third together; pronotum very similar, but carinæ of hind lobe not so elevated; lateral angles somewhat higher than posterior; abdomen with the fourth connexivum having only two lobes, of which the hind is very long; membrane brown with paler spots, and with partially anastomosed veins; pleuræ granulated only at periphery; fore-femora bigger than in *P. annulipes,* without granulation, UBF crenelated; coloration similar to *reticulata;* brown, fore-femora paler, middle and hind femora with dark rings.

Male.—Total length, 8.0 mm.

Patria: Colombia.

Type: ♂, Colombia, San Carlos; deposited in the National Museum Natural History, Paris.

28. **PHYMATA NOUAHLIERI** Handlirsch, 1897. Plate 6, figs. 97–102.

Phymata nomahlieri HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 153, Plate 4, fig. 3.

Phymata nouahlieri CHAMPION, Biol. Centr. Am., Rhyn. 2 (1898) 54, Plate 4, fig. 8.

Phymata nouahlieri EVANS, Ann. Ent. Soc. Am. 24 (1931) 728.

Male.—Head as long as wide across the eyes (17:17); frontal processes stout, short, directed upwards and divergent; preocellar processes protruding, blunt, divergent; ocellar processes dentiform, stout at base and tapering considerably to tip; proportions of antennal joints are: 5:8:8:18, the 4th joint of males is long and fusiform.

Pronotum less long than wide (32:38); fore-border sinuated; anterior angles long, dentiform, protruding forwards; ALA-borders strongly convex, rounded, rebordered, and crenelated; lateral notch small, obtusely angulated; ALP-borders short, rebordered, directed upwards; lateral angles small, dentiform, directed upwards; PLA-borders short, sinuated and rebordered; posterior angles rectangular, but not protruding, maximal width of pronotum; fore disk slightly inflated and finely granulated; hind disk strongly punctated, but without granulation; carinæ fine, rather high, at base, on posterior border of fore disk, provided with the (1 + 1) tubercles; anteriorly parallel, divergent; granulated.

Scutellum less long than wide (10:15); median carina sublinear, longitudinal ridge stout and granulated, lateral branches slender and without granulation.

Hemelytra with veins and tip of corium granulated; membrane brown, with anastomosed veins.

Abdomen less long than wide (53:59); connexivum elevated and on the fourth segment subvertical; AL-borders sinuated; PE-angles dentiform, protruding; the fourth connexivum with ultraconnexivum, latter forms two lobes, hind lobe bigger and longer; sometimes present a small third lobe; the fifth connexivum sinuated, anteriorly and posteriorly protruding as a tubercle; hind border rounded, but tip slightly notched; venter scabrous, with dispersed, somewhat blurred, granulation.

Pleuræ: Propleuræ along AEP and at inferior border granulated, on disk without granulation; fore-border finely denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ with sparse and fine granulation.

Legs: Fore-femora rather big and somewhat flat (25:12.5); disk without granulation, UBF remotely crenelated.

Coloration: Brown with some spots darker; fore disk and lateral bands of pronotum, and hemelytra somewhat darker; anterior angles and hind disk of pronotum, and ventral surface of body, paler ochre-brown; middle and hind femora and tibiæ with dark rings.

Male.—Total length, 7.2 mm; width of pronotum, 2.3 mm; width of abdomen, 3.6 mm.

Patria: U. S. A. (North Carolina, Georgia, Florida, Arizona), Mexico, Guatemala.

Type: The cotypes of Handlirsch are deposited in the Natural History Museum in Vienna, National Museum of Natural History, in Paris, etc.

Examined specimens: ♂, Knots Islands, May 7, 1953 (*G. Nelson*), from U. S. National Museum, Washington.

29. PHYMATA HANDLIRSCHI Champion, 1898.

Phymata handlirschi CHAMPION, Biol. Centr. Am. Rhyn. 2 (1898) 52, Plate 4, fig. 6.

Phymata handlirschi HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 154.

This species was described by Champion but his description is not sufficient, for the drawing is not comprehensible. Handlirsch loaned the type from Champion for his "Monographie der Phymatiden," but he gives no drawings. The following description is compiled from Champion and Handlirsch.

Female.—Head narrower than in *nouahlieri,* one and a half times as long as wide; preocellar and ocellar processes distinct; the fourth antennal joint less long than second and third together.

Pronotum similar to *nouahlieri,* but PLA-borders more expanded and not so vertical, deeper sinuated; lateral and posterior angles more protruding; lateral notch big; carinæ robust, without tubercles.

Scutellum with stout median carina, latter with sparse granulation.

Hemelytra almost without granulation, membrane brown, veins not anastomosed.

Abdomen narrower, in the middle less dilated than in all other species of "group annulipes"; PE-angles similar to those of *nouahlieri,* but fourth connexivum much narrower, bisinuated exteriorly, its posterior lobe protruding fifth and sixth connexiva with straight borders.

Pleuræ smooth on disk; fore-border of propleuræ denticulated.

Legs: Fore-femora big, rather flat, without granulation on disk.

Coloration: Brown, transversal band of abdomen, fourth connexivum on ventral surface, and fore-femora darker; middle and hind femora and tibiæ with dark rings.

Female.—Total length, 7.0 mm.

Patria: Panama.

Type: ♀, Panama, Vulcan Chiriqui (*Champion*). Deposited in the British Museum (N. H.), London.

30. PHYMATA MARGINATA (Fabricius), 1803. Plate 6, figs. 103-106.

Syrtis marginata FABRICIUS, Syst. Rhyng. (1803) 122.
Phymata marginata STÅL, Hem. Fabr. 1 (1868) 93.
Phymata marginata STÅL, Enum. Hem. 5 (1876) 132.
Phymata marginata HANDLIRSCH, Ann. Naturh. Hofmus. Wien 12 (1897) 155, Plate 5, fig. 4.

Male.—Head, as long as wide across eyes (♂, 13:13; ♀, 15:15); frontal processes strong, dentiform, almost vertical, slightly divergent; ocellar processes low and blunt; proportions of antennal joints are: ♂, 4:7:7:14; ♀, 4:8:7:10.5.

Pronotum strongly declivous anteriorly, less long than wide (♂, 24:41; ♀, 27:50); fore-border slightly sinuated; anterior angles small, directed sideways; ALA-borders slightly convex, crenelated; lateral notch big and deep; forming an acute angle, apically rounded; ALP-borders strongly convex, finely crenelated; lateral angles protruding, rectangular; PLA-borders straight and denticulated; ALP and PLA-borders forming together a winglike, elevated lobe slightly inclined sideways; posterior angles small, dentiform, directed out and backwards, maximal width of pronotum; PLP-borders very long and sinuated; from lateral angles in and forwards run high, curved carinæ (1 + 1); fore disk with an inverted smooth triangle, situated anteriorly in middle, laterally of it densely granulated;

hind disk deeply punctated. Carinæ narrow, but high, densely granulated anteriorly.

Scutellum less long than wide (♂, 7:13; ♀, 9:15); median carina sublinear, its median ridge densely granulated, lateral branches low, without granulation.

Hemelytra without granulation; membrane brown, shiny.

Abdomen less long than wide (♂, 48:53; ♀, 59:72); abruptly dilated laterally; AL-borders slightly sinuated; PE-angles scarcely protruding, tuberculiform; Pe3 longer and adhered to fourth connexivum fourth and fifth connexiva forming together a big lobe; its anterior border straight, long and almost perpendicular to longitudinal axis of insect; its exterior border forming two teeth, anterior small, posterior, situated in middle of lobe, is big, triangular, and directed upwards (Pe4), behind it border finely denticulated; PL-borders slightly sinuated; posterior border rounded, in middle scarcely notched.

Pleuræ: Propleuræ with rough granulation: fore-border denticulated; AEP deep and wide, reaching lateral notch; MM-pleuræ with elevated and granulated borders, discs with fine and sparse granulation.

Legs: Fore-femora small, inflated; disk sparse and fine granulation: UBF crenelated.

Coloration: Pale yellow to whitish; occiput, fourth antennal joint, fore and hind discs, and lateral bands of pronotum, scutellum, hemelytra and posterior border of abdomen, yellow-brown; inverted, smooth triangle of fore disk; spots of three first connexiva, transversal band of abdomen, and lateral angles of same on ventral surface, are walnut-brown.

Total length, ♂, 5.6; ♀, 6.7 mm; width of pronotum, ♂, 2.5; ♀, 3.0 mm; width of abdomen, ♂, 3.1; ♀, 4.5 mm.

Patria: Puerto Rico and St. Thomas Islands.

Type: It is not known where the type of Fabricius is.

Examined specimens: 1 ♂, with label "marginata (M. Lund)," and 1 ♂, with label "marginata det. Handlirsch," both from the Natural History Museum in Stockholm. Handlirsch considered, that the first specimen is either the type of Fabricius, or was compared with it by Stål [(1897) 156].

31. PHYMATA MARGINATA (Guérin), 1857. Plate 6, figs. 107–109.

Syrtis (*Phymata*) *emarginata* GUÉRIN in Sagra Hist. de Cuba (1857) 407.

Phymata emarginata HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 156.

Phymata emarginata BRUNER, Mem. Soc. Cub. Hist. Nat. 18 (1946) 14.

Male.—Head as long as wide across the eyes (16:16); frontal processes short, truncated and scarcely notched anteriorly; ocellar processes not developed; proportions of antennal joints are: 3.5:7:8:14.

Pronotum strongly declivous anteriorly, less long than wide (31:49); fore border deeply sinuated; anterior angles rectangular, directed forwards; ALA-borders slightly sinuated anteriorly, angulately rounded posteriorly; lateral notch very deep, narrow and rounded; ALP- and PLA-borders posteriorly together forming a winglike, elevated lobe, rounded anteriorly, truncated posteriorly at a right angle, lateral angles practically absent; posterior angles small, dentiform, directed sideways; posterior processes very small; fore disk inflated; without granulation, only at posterior border with a file of granulæ; hind disk punctated, but without granulation; carinæ anteriorly and posteriorly divergent, in the middle convergent and somewhat obliterated, anteriorly with dense granulation.

Scutellum short (7:13); median carina linear, stout, elevated, without granulation.

Hemelytra with a few small granulæ, only along veins; membrane reddish-brown, shiny.

Abdomen transverse (59:70); AL-borders regularly sinuated, from the fourth connexivum abruptly dilated; exterior border of the fourth connexivum, before and back of lateral angles convex; PE-angles dentiform, acute; Pe4 (back of lateral angles) not protruding; ultraconnexivum of fourth segment very broad; lateral angles rectangular, subvertical, slightly protruding; PL-borders angularly notched; posterior border very convex, rounded.

Pleuræ: Propleuræ granulated only at borders; fore-border denticulated; AEP wide and deep, reaches to lateral notch; MM-pleuræ without granulation, only fore-border of mesopleuron granulated; middle acetabulæ with a strong tooth, directed sideways.

Legs: Fore-femora small and short (18:11), inflated, disk without granulation; UBF crenelated; middle and hind femora, each with two rows of teeth.

Coloration: Testaceous; anterior angles, lateral notch, median carina of scutellum, connexiva posteriorly, and venter paler; hemelytra, connexiva anteriorly, transversal band of abdomen, propleuræ in middle, meso- and metapleuræ, and lateral angles of abdomen on ventral surface, ferrugineous; coxæ black.

Patria: Cuba.

Type: ♂, Cuba; deposited in the Natural History Museum in Vienna.

Examined specimens: 1 ♂, Cuba, Sierra de Organos, Rancho Mundito, January, 1947 (*J. A. Acuña & J. Ferras*). Identified by Dr. S. C. Bruner, from the collection of the author; 1 ♂, Cuba, identified by Stål, from the Natural History Museum in Stockholm.

32. PHYMATA ALBOPICTA Handlirsch, 1897. Plate 6, figs. 110–113.

Phymata albopicta HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 151, Plate 4, fig. 2.

Phymata albopicta CHAMPION, Biol. Centr. Am., Rhyn. 2 (1898) 54, Plate 4, fig. 9.

Phymata albopicta EVANS, Ann. Ent. Soc. Am. 24 (1931) 728.

Female.—Head longer than wide across eyes (18:14); frontal processes long, dentiform, subvertical, deeply notched anteriorly; preocellar processes dentiform, acute, inclined forwards; ocellar processes similar to preocellar, but bigger; proportions of antennal joints are: 5:7:7:11; Handlirsch stated that male with fourth joint stout, fusiform, longer than second and third together; granulation of body paler than background.

Pronotum less long than wide (29:41); anterior border sinuated; anterior angles dentiform, acute, directed forwards; ALA-borders obtusely angulated and granulated; lateral notch practically absent, slightly sinuated, but conspicuous by the absence of granulation: ALP-borders straight, granulated; lateral angles reborded, rectangular, terminated with a big, round tuberlce; PLA-borders deeply sinuated; posterior angles dentiform, acute, directed out and backwards; fore disk small, anteriorly in middle with an inverted, smooth triangle, laterally and back of it with dense granulation; hind disk with rough punctation, and fine, dispersed granulation; carinæ narrow, divergent backwards, with sparse granulation and without tubercles.

Scutellum less long than wide (10.5:15); disk inflated and with pale granulation; median carina linear, densely granulated.

Hemelytra with fine, dispersed, pale granulation; membrane fumigated, shiny, with anastomosed, brown veins.

Abdomen less long than wide (65:70); AL–borders straight, strongly divergent backwards, from fourth connexivum abruptly dilated and convex; ultraconnexivum of fourth segment well developed, subvertical; lateral angles rectangular, terminated with a strong, whitish granula; fifth connexivum slightly sinuated, the sixth straight (♀); PE-angles dentiform, acute, protruding.

Pleuræ: Propleuræ granulated at borders; fore-border denticulated; AEP deep and wide, reaching lateral angles; MM-pleuræ roughly rugose, but without granulation, with exception of borders.

Legs: Fore-femora rather flat and long (25:12); disk without granulation, UBF crenelated.

Coloration: Dirty brown, partially variegated with pale ochraceous; hind disk of pronotum anteriorly, hemelytra posteriorly, and abdomen on dorsal surface, brown to piceous; transversal band of hemelytra and spots of connexiva whitish; fore-femora and venter with a touch of reddish.

Female.—Total length, 7.3 mm; width of pronotum, 2.6 mm; width of abdomen, 4.3 mm.

Patria: U. S. A. (the Southern States), Mexico.

Type: the cotypes of Handlirsch are deposited in the museums of Vienna, Stockholm, Brussels, and others.

Examined specimen: ♀, Mexico, Cuernavaca, May, 1945 (*N. Krauss*), from U. S. National Museum, Washington.

33. **PHYMATA ANGULATA** Uhler, 1894. Plate 1, fig. 1; Plate 7, fig. 119.

Phymata angulata UHLER, Proc. Zool. Soc. Lond. (1894) 204.

Phymata angulata HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 156, Plate 5, fig. 6.

Female.—Head longer than wide across the eyes (17:14.5); frontal processes strong, blunt, notched, anteriorly, directed forwards, projecting beyond the tip of the first antennal joint; ocellar processes low and blunt; proportions of antennal joints are: 4:7:7:12. Handlirsch states that the male has the fourth antennal joint more than one and a half times longer than the second and third together.

Pronotum declivous anteriorly about 45°, laterally expanded into four (2 + 2) long and acute lobes (lateral and posterior angles), less long than wide (31:49); maximal width across posterior angles; fore-border sinuated; anterior angles small, blunt, directed forwards and slightly divergent; ALA-borders subangulated, slightly sinuated anteriorly, angularly rounded posteriorly, lateral notch deep, rounded; ALP-borders, long, slightly convex; lateral angles forming long, acute lobes, directed dilated and convex; ultraconnexivum of fourth segment well developed, subvertical; lateral angles rectangular, terminated with a strong, whitish granula; fifth connexivum slightly sinuated, the sixth straight (♀); PE-angles dentiform, acute, protruding.

Pleuræ: Propleuræ granulated at borders; fore-border denticulated; AEP deep and wide, reaching lateral angles; MM-pleuræ roughly rugose, but without granulation, with exception of borders.

Legs: Fore-femora rather flat and long (25:12); disk without granulation, UBF crenelated.

Coloration: Dirty brown, partially variegated with pale ochraceous; hind disk of pronotum anteriorly, hemelytra posteriorly, and abdomen on dorsal surface, brown to piceous; transversal band of hemelytra and spots of connexiva whitish; fore-femora and venter with a touch of reddish.

Female.—Total length, 7.3 mm; width of pronotum, 2.6 mm; width of abdomen, 4.3 mm.

Patria: U. S. A. (the Southern States), Mexico.

Type: the cotypes of Handlirsch are deposited in the museums of Vienna, Stockholm, Brussels, and others.

Examined specimen: ♀, Mexico, Cuernavaca, May, 1945 (*N. Krauss*), from U. S. National Museum, Washington.

33. PHYMATA ANGULATA Uhler, 1894. Plate 1, fig. 1; Plate 7, fig. 119.

Phymata angulata UHLER, Proc. Zool. Soc. Lond. (1894) 204.

Phymata angulata HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 156, Plate 5, fig. 6.

Female.—Head longer than wide across the eyes (17:14.5); frontal processes strong, blunt, notched, anteriorly, directed forwards, projecting beyond the tip of the first antennal joint; ocellar processes low and blunt; proportions of antennal joints are: 4:7:7:12. Handlirsch states that the male has the fourth antennal joint more than one and a half times longer than the second and third together.

Pronotum declivous anteriorly about 45°, laterally expanded into four (2 + 2) long and acute lobes (lateral and posterior angles), less long than wide (31:49); maximal width across posterior angles; fore-border sinuated; anterior angles small, blunt, directed forwards and slightly divergent; ALA-borders subangulated, slightly sinuated anteriorly, angularly rounded posteriorly, lateral notch deep, rounded; ALP-borders, long, slightly convex; lateral angles forming long, acute lobes, directed up and sideways; PLA-borders deeply sinuated; posterior angles in the form of long spines; directed up, out, and backwards; PLP-borders deeply sinuated; lateral borders from anterior to posterior angles covered with fine setigerous granulation; fore disk finely granulated; hind disk punctated and with fine, dispersed granulation; carinæ divergent backwards, granulated anteriorly.

Scutellum elongated (10:12); median carina sublinear, granulated; disk also granulated.

Hemelytra with fine and dispered granulation; membrane whitish, at base fumigated.

Abdomen transverse (57:73); AL-borders regularly sinuated, from fourth connexivum abruptly dilated and convex; PE-angles scarcely protruding, but dentiform; Pe4 more protruding, acute; PL-borders straight; discs of connexiva with dispersed setigerous ganulation.

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora rather big (26:15), short, inflated; disk with fine granulation; UBF crenelated.

Coloration: Testaceous to buff; head anteriorly, anterior angles of pronotum, ALA and PLP-borders of same, median carina of scutellum, connexiva, and venter, paler, almost whitish; lateral bands of pronotum testaceous; legs ivory, femora with ferrugineous rings; granulation of body also ivory.

Female.—Total length, 6.7 mm; width of pronotum, 3.0 mm; width of abdomen, 4.4 mm. Handlirsch states that the male is 5 mm long.

Patria: Windward Islands, St. Vincent Islands, Grenada.

Type: Males, cotypes of Uhler are deposited in the British Museum (N. H.) London and the Natural History Museum in Vienna.

Examined specimen: ♀, St. Vincent Islands, Three Rivers, August 29, 1941 (*R. G. Fennah*), from U. S. National Museum, Washington.

34. PHYMATA ACUTANGULA (Guérin), 1857. Plate 6, figs. 114–116.

Syrtis (*Phymata*) *acutangula* GUÉRIN in Sagra, Hist. de Cuba (1957) 408.

Phymata acutangula BRUNER, Mem. Soc. Cub. Hist. Nat. 18 (1946) 14, fig. 3.

Phymata acutangula KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 75 (note).

Handlirsch has not seen the type of Guérin, and as the latter has omitted to indicate that his species has a very short head, Handlirsch confounded this species with three species of Stål with very long head: *P. longiceps, P. simulans,* and *P. acuta,* and put the latter into synonymy of the former [(1897) 175]. His drawing of "acutangula" (Plate 4, fig. 6) is not *acutangula,* but a subspecies of *simulans.* Champion followed Handlirsch, and his "acutangula" also has nothing to do with the genuine *acutangula* [(1898) 53]. Barber has mentioned "acutangula" from Texas [(1913) 170], but already Van Duzee has doubted, if either three species of Stål, or "acutangula" of Barber, can be identical with *acutangula* Guérin [(1917) 279]. Bruner was the first to give the drawing and short description of the genuine *acutangula,* which have made possible the separation of the latter from the species of Stål [(1946) 14].

Male.—Head small, as long as wide across eyes, or scarcely longer (♂, 16:16; ♀, 16:15); frontal processes very short, not reaching tip of first antennal joint, truncated and in the middle scarcely notched anteriorly; ocellar processes practically absent; proportions of antennal joints are: ♂, 4:8:9:16; ♀, 4:7:8:12. Granulation of body very fine, inconspicuous.

Pronotum less long than wide (♂, 25:53; ♀, 32:58); foreborder deeply cut out; anterior angles angular, directed forwards; ALA-borders straight, crenelated; lateral notch forming a very obtuse angle; ALP-borders straight, very long, raised obliquely backwards, forming together with PLA-borders long, acute spines, directed up, out and slightly backwards, lateral angles; PLA-borders forming an acute angle, their fore branch much longer than hind branch; posterior angles small, dentiform, acute, directed out and backwards; PLP-borders relatively long and sinuated; posterior border cut out; fore disk inflated, without granulation; posterior disk punctated; carinæ scarcely marked, in middle obliterated, divergent backwards, with pale granulæ.

Scutellum less long than wide (♂, 10:15; ♀, 9:15) median carina sublinear, with sparse granulation, lateral branches somewhat obliterated.

Hemelytra anterior and posterior with a few, big, somewhat obliterated granulæ; membrane copper-brown, shiny.

Abdomen transverse (♂, 55:65; ♀, 60:71); AL-borders regularly sinuated from fourth connexivum abruptly dilated; forming together with fifth connexivum an acute, protruding angle (lateral angles); PE-angles not protruding; PL-borders distinctly sinuated; posterior border rounded.

Pleuræ: Propleuræ anteriorly granulated; fore-border inferiorly denticulated; AEP narrow and deep, reaching lateral notch; mesopleuræ with sparse granulation; metapleuræ scabrous, but without granulation.

Legs: Fore-femora small (♂, 19:9.5; ♀, 21:10.5); disk without granulation; UBF finely crenelated.

Coloration: Testaceous; lateral notch of pronotum, median carina of scutellum, ventral surface of body, and legs yellow; transversal band of abdomen piceous or black.

Total length: ♂, 6.6; ♀, 6.8 mm; width of pronotum: ♂, 3.2; ♀, 3.3 mm; width of abdomen: ♂, 4.1; ♀, 4.3 mm.

Patria: Cuba.

Type: In the ex-Gundlach collection?

Examined specimens: 1 ♂, Cuba, Cayo Mambi (*R. R. Otero*), identified by Dr. S. C. Bruner, from the collection of the author; 1 ♀, Cuba, from "ex-collection Uhler," identified by H. G. Barber as "Phymata sp. nov.?" and 1 ♀, Cuba, Barracoa (*A. Busk*), with a label: "*Ph. erosa* subsp. *acutangula* Handl.?", both from U. S. National Museum, Washington.

35. PHYMATA BIMINI Barber, 1954. Plate 7, figs. 117, 118.

Phymata bimini BARBER, Amer. Mus. Novit. No. 1682 (1954) 11, fig. 3.

Male.—Head short, scarcely longer than wide across eyes; frontal processes short, obtuse, not reaching tip of first antennal joint; ocellar processes small, granulated; proportions of antennal joints are (approximately): -:5:6:8 (the length of first segment not indicated by Barber).

Pronotum half as long as wide; fore-border sinuated; anterior angles angular, directed forwards; ALA-borders anteriorly straight, then strongly rounded, crenelated; lateral notch deep, subrectangular, rounded; ALP-borders long, straight, crenelated; lateral angles protruding sideways, forming an acute angle; PLA-borders almost rectangularly notched posteriorly; posterior angles dentiform, protruding out and backwards; PLP-borders deeply sinuated; posterior border angularly notched; fore disk sparsely granulated; hind disk almost without granulation; carinæ strong, convergent backwards and granulated anteriorly, from one-third of their length divergent backwards and with remote granulation.

Scutellum short, less long than wide; median carina linear, somewhat obliterated, and with sparse granulation.

Hemelytra without granulation.

Abdomen transverse, less long than wide (approximately 6:73); AL-borders deeply sinuated, from fourth connexivum abruptly dilated; PE-angles scarcely protruding; lateral angles forming an acute angle; PL-borders slightly sinuated; posterior border rounded.

Coloration: Head, pronotum anteriorly and lateral notch, hemelytra, connexivum ventral surface of body, and legs, yellow; some spots on head, transverse band across fore and most part of hind disk of pronotum, scutellum, inner borders of hemelytra, and transversal band of abdomen fuscous; membrane dark, fuliginous, shiny.

Total length, 7.5 mm; width of pronotum and abdomen, approximately, are: 3.7 and 4.8 mm, respectively.

Patria: Bahamas Islands.

Type: ♂, Bahamas, South Bimini Island, July, 1951 (*C. & P. Vaurie*). Deposited in the American Museum of Natural History, New York.

The description is compiled from the description and drawing of Barber. Barber indicates that this species is allied to *P. mystica* Evans (1931), but it seems that it should be more related to *P. acutangula* Guérin or *P. angulata* Uhler; the linear median carina of the scutellum indicates that this species cannot belong to "fasciata group," but it belongs to *P. mystica* Evans.

36. PHYMATA VICINA Handlirsch, 1897. Plate 7, figs. 120-123.

Phymata vicina HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 150.

Phymata vicina EVANS, Ann. Ent. Soc. Am. 24 (1931) 728.

Male.—Head longer than wide across the eyes (♂, 15:13; ♀, 17:13.5); frontal processes very strong, deeply notched, more or less elevated and divergent; preocellar processes strong, dentiform, divergent; ocellar processes small, divergent and granulated; proportions of antennal joints are: ♂, 3.5:5:5:15; ♀, 3.5:7:7:11.

Pronotum rather flat, anteriorly declivous (♂, 23:39; ♀, 22:39); fore border widely sinuated; anterior angles angular, acute, directed forwards; ALA-borders almost straight, crenelated posteriorly, before lateral notch, provided with a tooth; lateral notch is rather variable in size in various specimens, sometimes shallow and rounded, then deep and angulated; ALP-borders very short, sinuated, anteriorly forming together with lateral notch, an obtuse but sharply marked angle; lateral angles small, dentiform, slightly inclined sideways, maximal width of pronotum; PLA-borders almost twice as long as ALP-borders, bisinuated, and in middle, between cuts, provided with a small tooth, rarely absent; posterior angles dentiform, acute, directed out and backwards; PLP-borders deeply sinuated; fore disk small, granulated; hind disk deeply punctated, almost without granulation; carinæ straight, divergent backwards, sometimes anteriorly subparallel, then divergent; with a few big granulæ.

Scutellum long, apically acute (♂, 10:13; ♀, 13:14); median carina linear, with rough granulation.

Hemelytra with sparse, but distinct granulation; membrane white.

Abdomen ♂, less long than wide (42:54); AL-borders straight; fourth connexivum slightly convex exteriorly; PE-angles dentiform, protruding; Pe4 more protruding; PL-borders almost straight, provided posteriorly with a small tooth (Pe5); posterior border truncated; connexiva granulated. ♀, less long than wide (50:65); AL-borders slightly convex; PE-angles much protruding as acute triangles; Pe4 less acute, but also protruding: fifth and sixth connexiva sinuated exteriorly; Pe5 and Pe6 protruding as tubercles; posterior border rounded.

Pleuræ: Propleuræ granulated; fore border only denticulated inferiorly; AEP wide and deep, reaching lateral angles; MM-pleuræ finely granulated.

Legs: Fore-femora inflated (♂, 18:9; ♀, 19:10); disk with inconspicous granulation; UBF roughly crenelated.

Coloration: Rather variable, ♂, black, brown and whitish, ♀, buff, yellow and whitish, sometimes very pale, ivory and whitish.

Total length: ♂, 5.4 mm; ♀, 6.2 mm; width of pronotum, ♂, 2.4; ♀, 2.4 mm; width of abdomen: ♂, 3.2; ♀, 4.0 mm.

Patria: U. S. A.

Type: The two cotypes of Handlirsch were in the collection of Montandon.

Examined specimens: 1 ♂, U. S. A., Connecticut, Groton (*A. Jannson*), from the Natural History Museum, Stockholm; 2 ♂, 2 ♀, U. S. A., Texas Dallas, from the collection of the author.

Handlirsch has stated [(1897) 150], that *P. vicina* is most allied to the European species; this affinity is not very close, perhaps, *P. monstrosa* (F.) is somewhat more allied, but the palæarctic species can be placed after the former.

37. PHYMATA CRASSIPES (Fabricius), 1775. Figs. 121-126.

Acanthia crassipes Fabricius, Syst. Ent. (1775) 695.
Cimex chelifer Geoffroy-Fourcroy, Ent. Paris 1 (1785) 202.
Cimex crassipes Gmelin, Syst. Nat. 13 (1789) 2126.
Phymata crassipes Latreille, Hist. Nat. 3 (1802) 247.
Syrtis crassipes Fabricius, Syst. Rhyng. (1803) 121.
Phymata coarctata Flor. Rhynch. Livl. 1 (1860) 404.

Male.—Head longer than wide across the eyes (♂, 21:15; ♀, 21:15; frontal processes robust, slightly elevated, blunt apically, moderately notched; ocellar processes small, dentiform, granulated; proportions of antennal joints are: ♂, 4:8:7:24; ♀, 4:8:9:13, fourth joint of males is long, robust, cylindrical and slightly curved.

Pronotum rather flat, less long than wide (♂, 26:48; ♀, 28:44); fore-border deeply cut out; anterior angles forming an acute angle, directed forwards; ALA and ALP-borders forming together a straight line, before lateral angles, slightly convex, rounded posteriorly; lateral notch absent; lateral angles forming an obtuse angle, terminated with a pale tubercle; PLA-borders very short, straight; posterior angles small, dentiform, protruding sideways; fore disk with a sparse granulation; hind disk scabrous, deeply punctated, but without granulation; carinæ slender, high, remotely granulated.

Scutellum small (♂, 11:14; ♀, 11:14); median carina linear, slender, with somewhat obliterated granulation; disk transversely rugose.

Hemelytra densely and finely punctated, veins remotely granulated; membrane brownish, veins forming a few closed cells.

Abdomen as long (♂) or longer than wide (♀), laterally raised (♂, 70:70; ♀, 72:69); AL- and PL-borders in both sexes slightly convex; PE-angles protruding, angulate, with rounded tips; Pe4 obtusely angulated (♂), or rounded (♀); lateral angles forming a very obtuse angle; posterior border subtruncated (♂), or rounded (♀).

Pleuræ: Propleuræ finely granulated; fore-border denticulated; AEP deep and narrow, reaching lateral angles.

Legs: Fore-femora elongated, much longer than wide, inflated (♂, 27:12; ♀, 28:13); disk "chagrine"; UBF denticulated.

Coloration: ♂, brown, abdomen posteriorly paler; the first three connexiva partially whitish; head piceous; antennæ and legs ochraceous; ♀, testaceous, the first three connexiva partially whitish; antennæ and legs pale testaceous.

Total length: ♂, 7.8; ♀, 8.1 mm; width of pronotum: ♂, 2.9; ♀, 2.7 mm; width of abdomen: ♂, 4.5; ♀, 4.2 mm.

Patria: Europe, with exception of the colder zones, NW-Africa, Far East.

Type: Probably lost.

38. PHYMATA MONSTROSA (Fabricius), 1794. Plate 7, figs. 127–129.

Acanthia monstrosa FABRICIUS, Ent. Syst. 4 (1794) 74.
Syrtis monstrosa FABRICIUS, Syst. Rhyng. (1803) 122.
Phymata monstrosa BRULLE, Hist. Nat. (1835) 347.

Female.—Head longer than wide across eyes (♂, 18:13:5; ♀, 19:14); frontal processes dentiform, acute, erect, strongly divergent, granulated, between the tips shallowly notched; preocellar processes dentiform, acute, divergent; ocellar processes small dentiform, granulated; proportions of antennal joints are: ♂, 4:7:5.5:22; ♀, 4:7:8:11, fourth joint of males is long, cylindrical, slightly curved.

Pronotum with strongly raised lateral borders, less long than wide (♂, 25:45; ♀, 25:44); fore-border deeply notched; anterior angles spiniform, long and slender, directed forwards; ALA-borders deeply sinuated and finely crenelated, posteriorly forming an acute, erect triangle (♂), or tooth (♀); lateral notch shallow and rounded; ALP-borders strongly convex, rounded; lateral angles small, dentiform, protruding, PLA borders short, deeply sinuated; posterior angles dentiform, long, directed out and backwards; PLP-borders much longer than PLA-borders, shallowly sinuated; fore disk with sparse granulation; hind disk rugose, deeply punctated, but without granulation; carinæ slender, high, with sparse granulation, with a high tubercle on top.

Scutellum small (♂, 9:15; ♀, 9:14); median carina linear, finely granulated; disk transversely rugose.

Hemelytra finely and deeply punctated; veins granulated; membrane white, hyaline (♂), or white, opaque (♀), veins with a few closed cells.

Abdomen with lateral angles strongly upturned; less long than wide (♂, 60:71; ♀, 63:74); AL-borders sinuated, from fourth connexivum strongly convex; PE-angles spiniform, long, protruding; Pe3 more robust, dentiform; Pe4 rectangular, almost vertical; lateral angles forming an acute angle; fifth connexivum strongly convex anteriorly, sinuated posteriorly and terminated with a small, rectangular lobe; posterior border rounded.

Pleuræ: Propleuræ with fine and sparse granulation; foreborder finely crenelated, inferiorly with two or three teeth; AEP deep and narrow, reaching lateral angles.

Legs: Fore-femora not so long as in *P. crassipes* (F.), (♂, 22:11; ♀, 24:12), inflated, disk without granulation, UBF denticulated; the middle and hind femora with strong teeth and tubercles.

Coloration: ♂, piceous, variegated with brown and whitish; fore-femora brown, but near tibia, and tibia itself, cream-white or ivory; antennæ and the middle and hind tibiæ ochraceous; ♀, reddish-brown and testaceous; antennæ, middle and hind legs, pale testaceous.

Total length, ♂, 6.8; ♀, 7.2 mm; width of pronotum, ♂, 2.8; ♀, 2.7 mm; width of abdomen, ♂, 4.3; ♀, 4.5 mm.

Patria: Southwest Europe, Northwest Africa, and Syria.

Type: Probably lost.

Examined specimens: 1 ♂ & 1 ♀, from South France, and 1 ♂ from Spain, all from the collection of the author.

I could not examine *Phymata monstrosa* ssp. *griseipennis* Horváth (1907), but it can be separated from the typical form as indicated in the key.

39. **PHYMATA SUBINERMIS** Horváth, 1907. Plate 18, figs. 361-362.

Phymata subinermis HORVÀTH, Ann. Mus. Nat. Hung. 5 (1907) 305.

Phymata subinermis KIRITSHENKO, Trudy Zool. Inst. Acad. Nauk URSS 10 (1952) 181, fig. 27.

Through the good offices of Dr. A. N. Kiritshenko, professor of the Institute of Zoology of the Academy of Science URSS, I was able to examine a couple of this rare and curious species. It is a pleasure to express my sincere gratitude to him.

Male.—Head longer than wide across eyes (♂, 18:15; ♀, 18:15); frontal processes moderately long, upturned, slightly divergent, deeply notched; preocellar processes dentiform, raised above dorsal level of head; ocellar processes low, granulated; the proportions of antennal joints are: ♂, 4:7:7:14; ♀, 4:8:8:11.

Pronotum less long than wide (♂, 27:40; ♀, 29:46); fore border widely notched; anterior angles short, rectangular, directed forwards; ALA-borders straight, roughly granulated, forming with lateral notch a sharply marked angle; lateral notch small and shallow (♂), or deeper, angulated (♀), ALP-borders straight, granulated; lateral angles forming an obtuse angle (about 150°), terminated with a small tooth at tip, or rough granula; PLA-borders straight, granulated posterior angles angular, terminated with a tooth directed sideways; fore disk scabrous, with sparse granulation; hind disk scabrous, transversely rugose; carinæ sharply marked, with big granulated tubercle on top, front and back of it with a few granulæ.

Scutellum less long than wide (♂, 11:13; ♀, 14:19); median carina high, narrow, linear, granulated; the disk scabrous.

Hemelytra scabrous, the veins of corium with an obliterated granulation; membrane white, hyaline.

Abdomen less long than wide (♂, 57:70; ♀, 65:76); AL-borders scarcely sinuated, from the fourth connexivum slightly convex; PE-angles protruding as acute angles, directed somewhat backwards; Pe4 more protruding sideways as an acute (♂), or right (♀) angle; lateral angles forming a slightly acute (♂), or right (♀) angle; PL-borders: ♂, fifth connexivum straight, abruptly rounded posteriorly, sixth (posterior border) widely rounded; ♀, fifth connexivum anteriorly convex, then sinuated, angularly truncated posteriorly, sixth slighly sinuated in middle, abruptly rounded posteriorly; posterior border slightly sinuated in middle.

Pleuræ: Propleuræ with sparse granulation at borders; fore-border denticulated; AEP deep and long, reaching lateral angles; MM-pleuræ on inferior border denticulated.

Legs: Fore-femora twice as long as wide (♂, 22:11; ♀, 25:12.5); disk without granulation; UBF denticulated.

Coloration: Similar as in *P. monstrosa* (F.), ♂, black, brown, and ivory, ♀, buff; dorsal surface of head, transversal band of abdomen partially, and venter partially, darker, yellow-brown.

Total length: ♂, 7.0; ♀, 7.8 mm; width of pronotum: ♂, 2.4; ♀, 2.7 mm; width of abdomen: ♂, 4.4; ♀, 4.6 mm.

Patria: Russian Turkestan (Bokhara, Tadjikistan).

Type: The cotypes of Horváth are no longer in the Hungarian National Museum in Budapest.

Examined specimens: 1 ♂ & 1 ♀, Russian Turkestan, Tadjikistan, Portchi-say in the valley of Yavan-su River, May 16, 1943 (*Prof. A. N. Kiritshenko*), from the collection of the author.

This species is very allied to *P. monstrosa* (F.), and of the same main aspect, differing from the latter by the absence of the prominent tooth on the ALA-borders, and by the shorter fourth antennal joints of male, as long as second and third together.

40. PHYMATA BIPUNCTATA Kormilev, 1951. Plate 7, fig. 130.

Phymata bipunctata KORMILEV, An. Soc. Cient. Agr. 152 (1951) 174, fig. 3.

Female.—Head slightly longer than wide across the eyes (24:22); frontal processes fine, distinctly notched, protruding slightly beyond tip of first antennal joint; ocellar processes blunt, granulated; proportions of antennal joints are: 5:10:12:15.

Pronotum less long than wide (34.56), strongly declivous anteriorly, almost vertical, posteriorly horizontal; fore-border slightly sinuated; anterior angles small, dentiform, slightly divergent; ALA-borders anteriorly straight; then strongly convex, rounded, crenelated; lateral notch deep, rounded; ALP-borders very convex rounded; lateral angles low, forming an obtuse but sharply marked angle; PLA-borders slightly sinuated; posterior angles angulated; slightly protruding; fore disk granulated; hind disk punctated; carinæ divergent backwards, granulated anteriorly.

Scutellum short (13:22); median carina linear, densely granulated.

Hemelytra almost without granulation; membrane fumigated, at base white, hyaline.

Abdomen as long as wide (80:80); AL-borders at base sinuated, then convex; PE-angles angulated, slightly protruding; lateral angles forming an obtuse angle; PL-borders almost straight.

Coloration: Head, pronotum, scutellum, transversal band of abdomen and ventral surface of body, pale testaceous; anterior angles of pronotum and two-thirds of corium yellow, apex of latter ochraceous; big, ovate spot in interior angle of same, black; lateral notch of pronotum and connexivum before and back of transversal band whitish and slightly transparent; fourth antennal joint, fore disk of pronotum anteriorly, MM-pleuræ and tips of tibiæ, ferrugineous.

Female.—Total length, 6.0 mm; width of pronotum, 2.2 mm; width of abdomen, 3.2 mm.

Patria: Brazil (Estado do Paraná).

Type: ♀, Brazil, Paraná, Bituruna (*Staviarsky*). Deposited in the Brazil National Museum, Rio de Janeiro.

41. PHYMATA INTERJECTA Dudich, 1922. Plate 7, figs. 131-133.

Phymata marginata var. *interjecta* DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 164.

Male.—Head scarcely longer than wide across eyes (♂, 14:13; ♀, 15:14); frontal processes small, slightly notched; ocellar processes small, tuberculiform, granulated; the proportions of the antennal joints are: ♂, 4:6:7:12; ♀, 5:7:8:10.

Pronotum transverse (♂, 22:34; ♀, 28:43); fore-border widely notched; anterior angles rectangular, directed forwards; ALA-borders convex, rounded, crenelated; lateral notch wide and shallow; ALP-borders convex, rounded; lateral angles more or less elevated, forming an obtuse or scarcely acute angle, with tip sharply marked; PLA-borders straight; posterior angles angulated, strong, protruding sideways; fore disk scabrous and granulated, anteriorly in the middle with an inverted, smooth triangle; hind disk punctated; carinæ divergent backwards, anteriorly with fine granulation.

Scutellum short (♂, 8:13; ♀, 8:13); median carina linear, granulated.

Hemelytra with pale granulation on darker background; membrane yellowish.

Abdomen less long than wide (♂, 45:53; ♀, 57:65); AL-borders straight, from fourth connexivum abruptly dilated and convex; PE-angles not protruding; Pe4 slightly protruding; lateral angles forming a lobe, anteriorly convex, posteriorly straight tip rectangular; PL-borders sinuated (♂), or straight (♀); posterior border rounded.

Pleuræ: Propleuræ with strong granulation, almost spiculiform, but lying; fore-border crenelated; inferiorly denticulated; AEP wide and deep, projecting slightly beyond lateral notch. MM-pleuræ granulated.

Legs: Fore-femora short (♂, 16:9; ♀, 19:10); inflated; disk without granulation; UBF crenelated.

Coloration: Buff; anterior angles, lateral notch of pronotum, transversal band of hemelytra, and transverse bands of connexiva whitish; lateral bands and lateral angles of pronotum, transversal band of abdomen, and transverse bands of connexiva brown; male somewhat paler.

Total length: ♂, 4.6; ♀, 6.4 mm; width of pronotum, ♂, 2.0; ♀, 2.6 mm; width of abdomen, ♂, 3.2; ♀, 4.0 mm.

Patria: Haití.

Type: ♂, Haití, with labels: "Phymata sp. v. angulata Uhler," "marginata v. haitiensis nov.," and "Typus, Phymata marginata v. interjecta Dudich"; deposited in the Hungarian National Museum, Budapest.

Examined specimens: ♀, Haití, Port-au-Prince, January 20, 1930 (*E. Ducasse*). Designated allotype, deposited in the U. S. National Museum, Washington; 1 ♀, Haití; Surce Matelas, March 24, 1930 (*E. Ducasse*) from the same Museum.

P. interjecta Dudich is not related with *P. marginata* (F.), but it is a good species.

12. PHYMATA MALAISEI sp. nov. Plate 7, figs. 134–136.

Phymata sp. nov.? Melin, Ark. Zool. (2) 22 (1930) 37, fig. 40.

Female.—Head scarcely longer than wide across eyes (17:16); frontal processes short, slightly notched, not reaching tip of first antennal joint; ocellar processes dentiform, granulated, directed forwards; proportions of antennal joints are: 4:7:9:9.

Pronotum transverse (30:45), strongly declivous anteriorly, about 60°; fore-border widely sinuated; anterior angles small, dentiform, divergent; ALA-borders anteriorly straight, strongly rounded, crenelated; lateral notch wide and deep, rounded; ALP-borders strongly rounded; lateral angles elevated, rectangular; PLA-borders long, sinuated posteriorly; posterior processes very small; fore disk scabrous and granulated, anteriorly with an inverted, smooth triangle; hind disk finely and remotely punctated, and with very fine and dispersed granulation; carinæ low, divergent backwards, granulated anteriorly.

Scutellum short (10:16); median carina linear, densely granulated.

Hemelytra with fine, but conspicuous granulation; membrane brown.

Abdomen rhomboid (57:66); AL-borders firstly sinuated, then convex in continuous line; PE-angles slightly protruding as acute angles; Pe4 more protruding, apically blunt; lateral angles forming a slightly obtuse angle; PL-borders straight; posterior border rounded.

Pleuræ: Propleuræ granulated; fore-border denticulated inferiorly; AEP reaching lateral angles. MM-pleuræ granulated, on the inferior border more roughly.

Legs: Fore-femora twice as long as wide (20:10); disk finely granulated; UBF finely crenelated.

Coloration: Pale testaceous; fore disk of pronotum, hemelytra, and the transverse band of abdomen, testaceous; transverse band of hemelytra ochraceous; anterior angles and lateral notch of pronotum, and the transverse bands of connexiva, whitish, semitransparent.

Female.—Total length, 6.6 mm; width of pronotum, 2.7 mm; width of abdomen, 4.1 mm.

Patria: Venezuela.

Holotype: ♀, Venezuela, Merida; with the label of Melin "n. sp.?" Deposited in the Natural History Museum, Stockholm.

It is a pleasure to dedicate this species to Dr. Rene Malaise, of the Natural History Museum, Stockholm, as a token of gratitude for his continuous collaboration in sending various types of Hemiptera deposited in the above-mentioned museum.

The new species is mostly allied to *P. bipunctata* Kormilev (1951), but differs from it by the following: frontal processes much shorter, not reaching the tip of the first antennal joint; by the absence of the big, ovate, black spot in the interior angle of the corium, and other details.

13. PHYMATA KARSCHI Handlirsch, 1897.

Phymata karschi HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 174.

I could not see type of Handlirsch, but in the "Drake collection" (U.S. National Museum, Washington) a specimen is deposited with mutilated abdomen, so that the sex could not be identified, which I held for *P. karschi* Handlirsch; judging by coloration and relatively short apical antennal segment, it is probably a female. I give here short description:

Head much longer than wide across eyes (26:17); frontal processes long, notched apically, each lobe rounded; preocellar and ocellar processes small, the last dentiform; eyes moderately protruding; ocellii scarcely visible from above; proportions of antennal segments (1 to 4) are: 5:8:9:15.

Pronotum shorter than wide (35:46); anterior border widely emargined; anterior angles dentiform, directed forward: ALA-borders subangulate, forming an obtuse angle; lateral notch very deep and directed slightly backward; ALP-borders very convex rounded; lateral angles protruding above ALP-borders so that the whole lobe is slightly notched as in *P. armata* Handlirsch. PLA-borders slightly convex longer than PLP-borders; disk rather depressed; fore disk granulated, with exception of a broad median line, continued on hind disk; before that band a round depression or pit; carinæ straight, divergent, at the base granulated, but neither elevated nor provided with tubercle. Hind disk punctured.

Scutellum with a linear carina.

Abdomen antero-lateral borders straight, from the middle of connexivum III convex; lateral angles forming an almost right angle; the rest of the abdomen absent.

Pleuræ: Propleuræ ganulated; antennal excavation deep, reaching lateral notch; anterior borders granulated but not denticulated.

Legs: Fore-femora long (23:13).

Coloration: Pale yellow brown, transversal band of abdomen brown.

Dr. Stefan v. Kéler, professor and keeper of the lower insects in the Zoologisches Museum of Humboldt University, Berlin, kindly sent me some biometrical measures of the type: head, 13:7.6; pronotum, 12:21.6 (the relatively short length, perhaps could be explained that the measure was taken as a vertical projection on the whole body, and not on the disk of the same); abdomen, 29.6:34; fore-femora, 10.8:5.6; the proportions of the antennal segments (1 to 4) are: 4:8:8:8:8:12.8.

Total length (given by Handlirsch), 6.5 mm.

Patria: Brazil.

Type: ♀, Brazil; deposited in the Zoologisches Museum des Humbold's Universität, Berlin.

P. karschi does not belong to "fortificata group," that is, the subgenus *Phymatispa* Kormilev, but allied to *P. armata* Handlirsch.

14. PHYMATA ABERRANS Dudich. 1922. Plate 7, figs. 137-138.

Phymata maculipennis var. *aberrans* DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 164.

Male.—Head longer than wide across the eyes (20:15); frontal processes strong, slightly elevated, deeply notched, directed forwards; ocellar processes dentiform, directed forwards; proportions of antennal joints are: 4:7:9:11.

Pronotum less long than wide (30:44); fore-border deeply sinuated, almost semicircular; anterior angles dentiform, directed forwards; ALA-borders angulated, protruding; lateral notch narrow and deep, rounded; ALP-borders very convex, angularly rounded, forming a right angle; lateral angles forming a high, broad lobe, directed up, out and slightly backwards, the tip forming a very obtuse angle; PLA-borders straight and rather long, posterior angles small, angulated, directed sideways; fore disk granulated laterally; hind disk finely punctated and granulated anteriorly; carinæ divergent backwards, with a high tubercle on the top, densely granulated anteriorly.

Scutellum elongated (12:14); median carina linear, stout, densely granulated; disk almost without granulation.

Hemelytra almost without granulation; membrane white, hyaline, with some veins darker.

Abdomen less long than wide (47:68); AL-borders anteriorly straight, then convex; PE-angles subangulated, slightly protruding; lateral angles forming a slightly obtuse angle; PL-borders straight; connexiva, particularly fourth and fifth, finely granulated.

Pleuræ: Propleuræ densely granulated; fore-border denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora slightly inflated (22:10); disk with fine, dispersed granulation; UBF with strong, inclined, setigerous teeth.

Coloration: Testaceous; anterior angles and lateral notch of pronotum are whitish; connexiva first to third, and the tip of the abdomen also whitish; transversal band of abdomen brown; lateral bands of pronotum and vertical band of propleuræ reddish-brown; venter and middle and hind legs yellow.

Male.—Total length, 6.6 mm; width of pronotum, 2.7 mm; width of abdomen, 4.1 mm.

Patria: Brazil (Mato Grosso).

Type: ♂, Brazil, Mato Grosso, Cuyaba; deposited in the Hungarian National Museum, Budapest.

This species is neither allied nor variety of *P. maculipennis* Handlirsch, but a good, different species.

45. PHYMATA EROSA (Linnæus), 1758. Plate 7, figs. 139–141.

Cimex erosus LINNÆUS, Syst. Nat. 10 (1758) 443.
Cimex scorpio DE GEER, Mem. 3 (1773) 350, Plate 35, fig. 13.
Acanthia erosa FABRICIUS, Spec. Ins. 2 (1781) 337.
Syrtis erosa FABRICIUS, Syst. Rhyng. (1803) 121.
Phymata erosa LATREILLE, Hist. Nat. 12 (1804) 245.
Phymata feredayi SCOTT, Stett. Ent. Zeit. 31 (1870) 102.
Phymata erosa ssp. *linnei* HANDLIRSCH, Ann. Nat. Hofmus., Wien 12 (1897) 159.
Phymata erosa MELIN, Ark. Zool. (2) 22 (1930) 4.
Phymata scorpio KORMILEV, An. Soc. Cient. Arg. 152 (1951) 167.

This species is rather variable: *P. erosa* ssp. *huebneri* Melin (1930) is an extreme; *P. incisa* Kormilev (1951) is somewhat different, but nearer to *P. erosa* ssp. *huebneri* than to *P. erosa* s. str. The specimens from Rio Purus, mentioned by Melin as a possible subspecies, are nearer to *P. erosa* s. str., than to *P. erosa* ssp. *huebneri;* the specimens from Guiana, the type of Linnæus inclusively, are another extreme, the typical form. I have left only two extremes as valid subspecies: *P. erosa* (L.) s. str. and *P. erosa* ssp. *huebneri* Melin.

Male.—Head longer than wide across eyes (♂, 20:17; ♀, 20:17); frontal process strong, tapering, somewhat blunt at tip, deeply notched, directed forwards; ocellar processes dentiform, almost erect, granulated; proportions of antennal joints are: ♂, 5:7:8:15; ♀, 5:7:10:13.

Pronotum less long than wide (♂, 33:52; ♀, 33:52); fore-border widely notched; anterior angles dentiform, directed forwards; ALA-borders convex, crenelated, forming an obtuse angle, with sharply marked tip; lateral notch big, wide and deep, rounded; ALP-borders crenelated, very convex, rounded, lateral angles elevated and terminated with a tooth, slightly inclined sideways; PLA-borders long, sinuated; posterior angles small, tuberculiform, directed sideways, PLP-borders as long as PLA-borders, sinuated; fore disk "chagrine," but almost without granulation; hind disk very scabrous, punctated, and in middle transversely rugose, but almost without granulation; carinæ high, anteriorly with dense granulation, but without tubercle on top or rooflike elevation.

Scutellum less long than wide (♂, 11:17; ♀, 12:18); median carina wide, low, and finely granulated, linear.

Hemelytra without granulation; membrane brownish.

Abdomen less long than wide (♂, 52:60; ♀, 60:80); AL-borders at base slightly sinuated, then, from the fourth connexivum, slightly convex; PE-angles protruding as small teeth; Pe4 protruding as an acute angle; lateral angles forming a right angle; PL-borders at base slightly convex, then sinuated; connexivum without granulation; in female lateral angles slightly obtuse, PL-borders straight.

Pleuræ: Propleuræ finely granulated; fore-border crenelated, denticulated inferiorly; AEP deep and wide, reaching beyond lateral notch. MM-pleuræ with rough granulation at inferior border, with fine and sparse granulation on disk.

Coloration: ♂, yellow or ochre-yellow; head on dorsal surface, lateral bands and hind disk of pronotum, basal angles of scutellum, small spots on third connexivum, transversal band of abdomen, posterior part of propleuræ, and lateral

47. **PHYMATA ARMATA** Handlirsch, 1897. Plate 8, figs. 148-150.

Phymata armata HANDLIRSCH, Ann. Naturh. Hofmus.; Wien 12 (1897) 174.

Phymata armata DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 162.

Phymata armata KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 82, fig. 81.

Male.—Head slightly longer than wide across eyes (♂, 18:16; ♀, 18:16); frontal processes very strong, deeply cut out, and generally divergent; ocellar processes dentiform; proportions of antennal joints are: ♂, 5:7:8:13; ♀, 5:7:8.5:12.

Pronotum strongly declivous anteriorly; less long than wide (♂, 28:45; ♀, 31:56); fore-border deeply sinuated; anterior angles dentiform, very protruding forwards; ALA-borders angulated, protruding, forming a right or slightly acute angle, terminated with a tubercle or small tooth; lateral notch deep and narrow; ALP-borders very protruding, forming a round lobe; ALP + PLA-borders forming together a wide lobe, directed forwards, and slightly notched anteriorly; PLA-borders slightly convex; posterior angles small, directed sideways; fore disk granulated; hind disk deeply punctated and with sparse granulation; carinæ high, divergent backwards, on the top with a tubercle or ridge, densely granulated anteriorly.

Scutellum less long than wide (♂, 12:16; ♀, 12:17); median carina linear, granulated, disk almost without granulation.

Hemelytra apically with sparse granulation; membrane white, hyaline, the veins sometimes darker.

Abdomen less long than wide (♂, 50:72; ♀, 57:76); AL-borders sinuated, from the fourth connexivum convex; PE-angles tuberculiform, protruding, sometimes very big and angularly protruding; Pe4 slightly protruding, rounded; apically; lateral angles forming an obtuse angle; PL-borders straight or slightly convex; posterior border rounded.

Pleuræ: Propleuræ finely granulated, along inferior border of antennal excavation (AEP) with rough and dense granulation; fore-border with strong teeth; AEP wide and deep, reaching lateral notch; MM-pleuræ almost without granulation.

Legs: Fore-femora wide and short (♂, 23:13; ♀, 22:12); disk without granulation; UBF crenelated.

Coloration: Yellow-brown to testaceous; anterior angles and lateral notch of pronotum, and connexiva, pale yellowish; pleuræ with the touch of orange or reddish; lateral bands and lateral angles of the pronotum, the tip of the corium, and a small spot on superior border of AEP, brown; transversal band of abdomen, and spots on connexiva second, third, and sixth, piceous; ♀, paler, ochraceous; anterior angles and lateral notch of pronotum, and transversal band of hemelytra, pale yellowish; transversal band of abdomen testaceous.

Total length: ♂, 6.8; ♀, 7.3 mm; width of pronotum: ♂, 2.7; ♀, 3.0 mm; width of abdomen: ♂, 4.4; ♀, 4.7 mm.

Patria: Brazil, Paraguay, Argentina, Venezuela.

Type: The cotypes of Handlirsch are deposited in various museums: Vienna, Berlin, etc.

48. PHYMATA PARILIS Dudich, 1922. Plate 8, figs. 151-152.

Phymata parilis DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 169, fig. 4.

Phymata parilis KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 55 (note).

Male.—Head longer than wide across eyes (19:16); frontal processes strong, dentiform, deeply notched, directed fore and upwards; ocellar processes dentiform, slender, long, inclined forwards; the proportions of the antennal joints are: 5:7:9:14.

Pronotum strongly declivous anteriorly; fore-border widely notched; anterior angles dentiform, slender, directed forwards; ALA-borders elevated; forming an acute lobe with denticulated borders; lateral notch narrow and very deep, rounded; ALP + PLA-borders forming together a big lobe, deeply notched anteriorly, forming two big teeth (ALP and lateral angles), directed forwards; PLA-borders long and slightly convex, denticulated; posterior angles small, protruding sideways; fore disk "chagrine," and with granulation forming "V" in middle of disk; on posterior border, at base of carinæ, situated two (1 + 1) high, erect teeth; hind disk scabrous, with sparse granulation; carinæ narrow, anteriorly parallel, then divergent backwards, granulated anteriorly and provided with high, blunt, granulated tubercle on top, slightly lower than tooth at base of carinæ.

Scutellum less long than wide (12:16); median carina stout, high, granulated; disk without granulation.

Hemelytra without granulation; membrane yellowish, at base with a big, fumigated spot.

Abdomen less long than wide (50:69); AL-borders scarcely sinuated, from fourth connexivum slightly convex; PE-angles dentiform, protruding; Pe4 forming an acute angle; lateral forming a right, or slightly acute angle; PL-borders slightly sinuated; posterior border rounded.

Pleuræ: Propleuræ densely granulated with lying spiculæ; fore-border with dense spiculæ and teeth; AEP wide, deep and short, reaching lateral notch; MM-pleuræ finely granulated.

Legs: Fore-femora twice as long as wide (22:11), inflated, disk with fine and sparse granulation; UBF crenelated.

Coloration: pale yellowish to yellow; anterior angles and lateral notch of pronotum whitish; fore disk and lateral bands of same, corium inferiorly, transversed band of abdomen, vertical band of propleuræ, meso- and metapleuræ and fourth antennal joints, testaceous.

Male.—Total length, 6.8 mm; width of pronotum, 2.9 mm; width of abdomen, 4.1 mm.

Patria: Brazil.

Type: Brazil, deposited in the Hungarian National Museum, Budapest.

Examined specimen: 1 ♂, Brazil, Estado Rio, Itatiaya, 700 m (*J. F. Zikan*), from the collection of Dr. P. Wygodzinsky, Tucumán, Argentina.

49. PHYMATA LUXA Evans, 1931. Plate 8, figs. 153–155.

Phymata luxa EVANS, Ann. Ent. Soc. Am. 24 (1931) 728.

Female.—Head slightly longer than wide across eyes (15:14); frontal processes dentiform, blunt apically, preocellar processes small, dentiform, divergent; ocellar processes small, dentiform; proportions of antennal joints are: ♀, 3:7:8:9.5; the male, according to Evans, it has fourth joint as long or slightly longer than second and third together.

Pronotum flat, slightly declivous anteriorly, less long than wide (23:34); fore-border widely notched; anterior angles dentiform, slightly divergent; ALA-borders slightly sinuated posteriorly, before lateral notch with a small tooth; lateral notch short and shallow; ALP-borders convex, rounded; lateral angles slightly protruding, forming an obtuse angle; PLA-borders short and scarcely sinuated; posterior angles obtuse, not protruding; fore disk finely granulated; hind disk without granulation; carinæ straight, elevated, rather robust, divergent backwards, with slightly obliterated granulæ.

Scutellum less long than wide (8:12); median carina cruciform, low, with blurred granulation; disk granulated.

Hemelytra with a few rough granulæ in middle of corium; membrane yellowish, with somewhat anastomosed veins.

Abdomen less long than wide (54:58); AL-borders almost straight; PE-angles protruding as small teeth; the exterior border of fourth connexivum scarcely convex; Pe4 slightly protruding; PL-borders straight; Pe5 protruding as a tubercle; posterior border rounded.

Pleuræ: Propleuræ finely granulated; fore-border denticulated; AEP wide, deep and long, reaching lateral angles; MM-Pleuræ with fine granulation on disk, and rough at borders.

Legs: Fore-femora elongated (22:10), inflated; disk without granulation; UBF crenelated.

Coloration: ♀, buff and whitish; ♂, according to Evans, brown and whitish.

Female.—Total length, 6.1 mm; width of pronotum, 2.1 mm; width of abdomen, 3.4 mm.

Patria: U. S. A. (Texas, Arizona, Colorado).

Examined specimen: ♀, U. S. A., Arizona, Phoenix (*C. H. Hicks*); identified by Mr. J. Lutz, Philadelphia; from the collection of the author.

50. PHYMATA MACULIPENNIS Handlirsch, 1897. Plate 8, figs. 156–158.

Phymata maculipennis Handlirsch, Ann. Naturh. Hafmus., Wein 12 (1897) 158.

Phymata maculipennis MELIN, Ark. Zool. (2) 22 (1930) 29.

Female.—Head longer than wide across eyes (19:16); frontal processes strong, notched anteriorly, directed forwards; ocellar processes in the form of a fine spicula; proportions of antennal joints are: 4.5:8:10:12.

Pronotum flat, declivous anteriorly, less long than wide (30:45); fore-border widely cut out; anterior angles small, dentiform, directed forwards; ALA-borders almost straight, roughly crenelated and with a tooth in middle, bent posteriorly at right angle; lateral notch small, deep, rounded; ALP-borders convex, crenelated; lateral angles with a small tooth inclined sideways; PLA-borders slightly sinuated; posterior angles small, dentiform, directed sideways; fore disk with fine granulation; hind disk flat, scabrous, and sprinkled with very fine granulation; hind disk flat, scabrous, and spinkled with very fine granulation; carinæ high, in the form of a roof, seeing from behind higher than lateral angles, more anteriorly, less posteriorly, granulated, divergent backwards anteriorly, then parallel.

Scutellum less long than wide (11:16); median carina subcruciform, high, densely granulated, disk less granulated.

Hemelytra with a sparse and fine granulation; membrane whitish.

Abdomen less long than wide (56:71); AL-borders at base sinuated then strongly convex; PE-angles protruding as big, acute angles; Pe4 less protruding; lateral angles forming an obtuse angle, about 135°; PL-borders almost straight; posterior border widely rounded; connexiva sprinkled with fine granulation.

Pleuræ: Propleuræ densely granulated; fore-border denticulated; AEP deep and wide, almost reaching lateral angles; MM-pleuræ reborded and with dispersed, very fine granulation.

Legs: Fore-femora short, wide, inflated (19:11); disk without granulation; UBF roughly crenelated.

Coloration: Pale yellow; lateral bands and hind disk of pronotum ochre-brown; base and a few apical spots of hemelytra, transversal band of the abdomen, a dot on the second, and a band on the third connexiva, propleuræ back of lateral notch, MM-pleuræ, lateral angles of abdomen on ventral surface, and lateral bands on second sternite, testaceous, sprinkled with very fine, pale granulation.

Female.—Total length, 7.0 mm; width of pronotum, 2.8 mm; width of abdomen, 4.2 mm.

Patria: Brazil.

Type: 1 ♂ and 2 ♀, Handlirsch considered as cotypes; one of the females, which I could examine, I propose as a lectotype.

Lectotype.—♀, Brazil, labels: "Stål," and "maculipennis det. Handlirsch"; deposited in the Natural History Museum, Stockholm.

51. PHYMATA SEVERINI Handlirsch, 1897. **Plate 8, figs. 159–161.**

Phymata erosa ssp. *severini* HANDLIRSCH, Ann. Naturh. Hofmus., Wein 12 (1897) 159.

Phymata severini EVANS, Ann. Ent. Soc. Am. 24 (1931) 724.

Male.—Head longer than wide across eyes (♂, 18:15.5; ♀, 18:16); frontal processes strong, obtuse apically, slightly notched, somewhat divergent; ocellar processes dentiform, granulated; the proportions of the antennal joints are: ♂, 4.6:9:13; ♀, 4:8:9:11.

Pronotum less long than wide (♂, 31:45 across the lateral angles, ♀, 34:47 across the posterior angles); fore-border widely notched; anterior angles triangular; ALA-borders straight anteriorly, then rounded, crenelated; lateral notch deep, rounded; ALP-borders convex, rounded; lateral angles forming a right (♂), or slightly obtuse (♀) angle, sharply marked, but not produced in a spine; PLA-borders sinuated;

posterior angles dentiform, directed out and backwards; fore disk with rough granulation; hind disk scabrous, but without granulation; carinæ strong, parallel anteriorly and with dense granulation, then divergent and with remote granulation.

Scutellum elongated (10:13); median carina subcruciform, high and narrow, granulated on the median ridge, lateral branches without granulæ.

Hemelytra with sparse, but coarse granulæ; membrane brown.

Abdomen less long than wide (♂, 56:75; ♀, 60:78), AL-borders slightly sinuated, from the fourth connexivum convex, rounded; PE-angles protruding, dentiform; Pe4 more protruding, acute; lateral angles forming an acute (♂), or right (♀), angle; PL-borders almost straight; posterior border rounded; venter with setigerous granulation.

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP relatively narrow and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora inflated, short (♂, 22:11.5; ♀, 22:12); disk granulated, UBF crenelated; forecoxæ anteriorly with a strong tooth.

Coloration: Ochraceous and testaceous, or brown, transversal band of the abdomen black, variegated with brown; middle and hind femora with brown ring, tibiæ with two rings. Female is paler.

Total length: ♂, 6.9; ♀, 7.2 mm; width of pronotum: ♂, 2.7; ♀ 2.7 mm; width of abdomen: ♂, 4.6; ♀, 4.9 mm.

Patria: Mexico, Guatemala, Panama.

Type: Was not designated by Handlirsch, his cotypes are deposited in various museums.

Examined specimens: 2 ♂ and 4 ♀, Mexico (various localities), all from U.S. National Museum in Washington.

This species has been sexual dimorphism scarcely developed, the females are only bigger and slightly paler.

PHYMATA SEVERINI DYERI ssp. nov. **Plate 8, figs. 162-164.**

Male.—In general very similar to typical form, but slightly smaller and relatively narrower anteriorly; differs from typical form principally by frontal processes stronger and longer, forehead also longer (19:15); ALA-borders angulated posteriorly, or almost angulated, not rounded; lateral notch relatively deeper; lateral angles produced into long, acute teeth, slightly inclined sideways; PE-angles more protruding, and Pe4 more acute; pleuræ and venter almost without granulation; fourth antennal joints in male slightly longer; proportions are: 4:8:8:15, pronotum less long than wide (28:43), and abdomen also (51:64)

Male.—Total length, 6.5 mm; width of pronotum, 2.6 mm; width of abdomen, 3.9 mm.

Patria: Honduras.

Holotype.—♂, Honduras, La Caiba, March 21, 1916 (*F. J. Dyer*). Deposited in the U. S. National Museum, Washington.

Paratype.—♂, Honduras, Tegucigalpa, March 31, 1917 (*F. J. Dyer*). Deposited in the collection of the author.

52. PHYMATA FŒRSTERI Kormilev, 1951. Plate 8, figs. 165–167.

Phymata fœrsteri KORMILEV, Mis. Est. Pat. Reg. Arg. 22 (1951) 53, fig. 1–2.

Male.—Head short, as long as wide across the eyes (15:15); frontal processes small, notched anteriorly, scarcely reaching tip of first antennal joint; ocellar processes small, dentiform, granulated; proportions of antennal joints are: 4:7:9:13.

Pronotum less long than wide (25:35); strongly declivous anteriorly, fore-border slightly situated; anterior angles small, tuberculiform, scarcely protruding; ALA-borders reborded, crenelated, anteriorly straight then strongly rounded; lateral notch deep, rounded; ALP-borders elevated, convex, rounded; lateral angles raised, directed up and forwards, forming an obtuse angle, but tip sharply marked; PLA-borders slightly convex, crenelated, as long as PLP-borders; posterior angles small, dentiform, directed sideways, maximal width of pronotum; fore disk almost without granulation; hind disk with strong punctation and very fine granulation; carinæ elevated, narrow, anteriorly parallel and granulated, then divergent, on top with a high, granulated, tubercle.

Scutellum less long than wide (10:13); median carina subcruciform slightly obliterated, finely granulated.

Hemelytra without granulation; membrane white, hyaline.

Abdomen fairly dilated, less long than wide (46:66); AL-borders sinuated, from fourth connexivum slightly convex; PE-angles slightly protruding; Pe4 protruding as an acute tooth; lateral angles forming an acute angle; PL-borders convex anteriorly (the fifth connexivum), then sinuated.

Pleuræ: Propleuræ with fine and dispersed granulation; fore-border crenelated, denticulated inferiorly; AEP wide and deep, reaching lateral notch; MM-pleuræ with fine granulation.

Legs: Fore-femora short, inflated (17:10); disk almost without granulation; UBF finely crenelated.

Coloration: In life: head, hind disk of pronotum, one vertical band on propleuræ, MM-pleuræ almost entire, pale testaceous or yellow-brown; one broad band across fore disk, anterior border and median depression of hind disk, and a round spot on lateral angles of pronotum, scutellum, clavus and base of corium, transversal band of abdomen (interrupted in middle of dorsum), lateral angles of same on ventral surface, and fore-femora brown or reddish brown; fore-border of fore disk, and almost entire propleuræ are ivory; rest of body pale green (lettuce-green); at tip of corium situated a small, brown dot.

Male.—Total length, 5.8 mm; width of pronotum, 2.2 mm; width of abdomen, 3.8 mm.

Patria: Paraguay.

Type: ♂, Paraguay, Independencia, May 25, 1951 (*J. Fœrster*). Deposited in the collection of the author.

53. PHYMATA PULCHRA Dudich. 1922. Plate 8, figs. 168–169.

Phymata pulchra DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 165, fig. 1.

Phymata wygodzinskyi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 586.

Phymata anchietai KORMILEV, Mis. Est. Pat. Reg. Arg. 22 (1951) 55, fig. 3.

The description of Dudich is not sufficient, his drawing is rather poor, and then his type is somewhat aberrant in coloration, much paler than other examined specimens (*P. wygodzinskyi* and *P. anquietai*), with lateral angles of pronotum and scutellum less developed than in *P. wygodzinskyi*. The type of *P. wygodzinskyi*, also a male, is another extreme: smaller and much narrower than the type of *P. pulchra*, the lateral angles of the pronotum and abdomen more acute, and more protruding, the coloration is much darker, so that I could not recognize *P. pulchra* till I had seen the type. The sexual dimorphism in this species is very developed, so that I could not identify the male as cospecific (*P. wygodzinskyi*) and the female (*P. anquietai*), till I had compared them with the type of *P. pulchra*, which is more similar to *P. anquietai* than *P. wygodzinskyi*. Now I consider these three species as identical, so that *P. wygodzinskyi* and *P. anchietai* go into synonymy of *P. puchra*, the latter having the priority.

Male.—Head short (♂, 16:15; ♀, 17:17.5); frontal processes short, blunt slightly notched anteriorly, not reaching tip of first antennal joint; ocellar processes small, blunt; the proportions of antennal joints are: ♂, 5:8:8.5:18; ♀, 5:9:10:14, fourth joint in males longer than second and third together.

Pronotum less long than wide (♂, 30:43; ♀, 30:49); fore-border widely cut out; anterior angles short, rectangular; ALA-borders straight, rounded posteriorly, crenelated; lateral notch small, shallow, rounded; ALP-borders slightly convex, rounded; lateral angles raised and produced in a slightly acute lobe, directed up and backwards, blunt apically; PLA-borders short and straight; posterior angles small, angulated, directed sideways; fore disk with rough granulation, with an inverted, smooth triangle, hind disk almost without granulation, finely punctated anteriorly in the middle; carinæ divergent backwards, granulated anteriorly. In the female lateral angles lower.

Scutellum less long than wide (♂, 10:15; ♀, 12:17); median carina cruciform, granulated.

Hemelytra almost without granulation; membrane yellowish.

Abdomen less long than wide (♂, 56:68; ♀, 65:84); ♂, AL- and PL-borders strongly sinuated; PE-angles scarcely protruding; Pe4 dentiform, protruding and curved; lateral angles forming an acute angle; ♀, AL- and PL-borders straight; lateral angles much less protruding, forming a right angle, but Pe4 acute.

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP wide, almost reaching lateral angles; MM-pleuræ with sparse granulation.

Legs: Fore-femora short, inflated, (♂, 21:11; ♀, 25:15); disk without granulation; UBF finely crenelated.

Coloration: The type of Dudich, ♂, very pale: ivory with diffused buff spots; fourth antennal joints, lateral bands of pronotum and lateral angles of same, testaceous; hemelytra brown with transversal band white, with a touch of roseate; transversal band of abdomen mahogany-red; tips of lateral angles of pronotum and abdomen black. The type of *P. wygodzinskyi,* also a male, much darker; testaceous, chestnut-brown and dark mahogany-red; transversal band of abdomen mahogany-red, lateral angles of abdomen with black tips. The females are of more or less the same color as the type of Dudich.

Total length: ♂, 6.5; ♀, 7.4 mm; width of pronotum: ♂, 2.5: ♀, 3.0 mm; width of abdomen: ♂, 4.2; ♀, 5.1 mm (type of *P. wygodzinskyi,* ♂, only 3.6 mm).

Patria: Brazil (Sâo Paulo, Rio Grande do Sul).

Type: ♂, Brazil, São Paulo, deposited in the Hungarian National Museum, Budapest.

Examined specimens: Besides the type of *P. pulchra* Dudich, were also examined the types of *P. wygodzinskyi* Kormilev, and *P. anchietai* Kormilev, and 1 ♂ from Rio Grande do Sul.

54. PHYMATA MAYRI sp. nov. Figs. 170–171.

Male.—Head almost as long as wide across eyes (12:11.5); frontal processes short, blunt, slightly notched anteriorly, scarcely projecting beyond tip of first antennal joint; preocellar processes small, slightly raised above frontal plate; ocellar processes dentiform, inclined forwards; proportions of antennal joints are: 5:5:6:12, fourth joint being slightly longer than second and third together.

Pronotum less long than wide (24:35); fore-border deeply cut out; anterior angles short, angulated, slightly divergent; ALA-borders convex, rounded, crenelated; lateral notch deep, angulated; ALP-borders convex, rounded and crenelated; lateral angles raised, directed up and slightly sideways forming a right angle; PL-borders almost straight; posterior angles angular, slightly protruding sideways; fore disk anteriorly in middle scabrous laterally and granulated posteriorly; hind disk almost without granulation; carinæ slightly divergent backwards.

Scutellum less long than wide (8:11); median carina cruciform, median ridge stout and with sparse granulation, lateral branches lower, granulated.

Hemelytra without granulation; membrane yellow-brown.

Abdomen less long than wide (37:55); laterally dilated; AL-borders sinuated, from the middle of third connexivum abruptly dilated and convex; PE-angles dentiform, protruding; Pe4 more protruding, dentiform; PL-borders slightly sinuated; posterior border rounded; lateral angles forming an acute angle.

Pleuræ: Propleuræ almost without granulation, but borders granulated; fore-border denticulated; AEP deep and wide, reaching lateral notch.

Legs: Fore-femora short (24:13), slightly inflated; disk indistinctly granulated; UBF crenelated.

Coloration: Ochre-yellow; fore-disk, lateral bands and hind disk of pronotum, scutellum, hemelytra, forelegs, and lateral angles of abdomen on ventral surface, brown to testaceous; small dots on second connexivum, a transverse band on third, and transversal band of abdomen mahogany-red; lateral notch of pronotum median carina of scutellum, and transversal band of hemelytra, ochraceous.

Male.—Total length, 7.8 mm; width of pronotum, 3.5 mm; width of abdomen, 5.5 mm.

Patria: Paraguay.

Holotype.—♂, Paraguay, San Luis (*Reimoser*); deposited in the Natural History Museum, Vienna.

55. PHYMATA PENNSYLVANICA Handlirsch, 1897. Plate 8, fig. 172; Plate 9, fig. 174.

Phymata erosa ssp. *pennsylvanica* HANDLIRSCH, Ann. Naturh. Hofmus., Wein 12 (1897) 163.

Phymata americana newyorkensis MELIN, Ark. Zool. (2) 22 (1930) 7.

Phymata pennsylvanica pennsylvanica EVANS, Ann. Ent. Soc. Am. 24 (1931) 714.

Phymata pennsylvanica KORMILEV, Mis. Est. Pat. Reg. Arg. 24 (1953) 63.

Male.—Head short, slightly longer than wide across eyes (♂, 21:19; ♀, 20:19); frontal processes strong, apically acute, raised and slightly divergent, slightly project beyond tip of first antennal joint; preocellar processes well developed, slender, dentiform, divergent; ocellar processes slender, dentiform; proportions of antennal joints are: ♂. 4.5:10:9:23; ♀, 5:10:9:17, fourth antennal joint of males longer than second and third together.

Pronotum less long than wide (♂, 35:51; ♀, 37:49), declivous anteriorly; fore-border widely cut out; anterior angles dentiform, acute, directed forwards; ALA-borders very convex, rounded, crenelated; lateral notch deep, angulated; ALP-borders convex, rounded; lateral angles forming a right (♂), or obtuse (♀) angle; PLA-borders sinuated (♂), or straight (♀); posterior angles dentiform, protruding sideways (♂), or blunt, not protruding (♀); fore disk anteriorly in middle with an inverted, smooth triangle granulated laterally and posteriorly; hind disk scabrous, and with dispersed, very fine, concolor granulation; carinæ low, divergent backwards, anteriorly granulated.

Scutellum less long than wide (♂, 13:18; ♀, 12:19); median carina cruciform, granulated.

Hemelytra without granulation; membrane brown, shiny.

Abdomen less long than wide (♂, 65:78; ♀, 70:88); ♂, AL-borders straight, from the fourth connexivum abruptly dilated, exterior border of fourth connexivum straight, PE-angles tuberculiform, scarcely protruding; Pe4 acute, protruding; lateral angles forming a slightly acute angle; PL-borders slightly sinuated. ♀, AL-borders straight; lateral angles forming an obtuse angle; PL-borders scarcely convex.

Pleuræ: Propleuræ on the disk finely, at the borders roughly granulated; fore-border crenelated, denticulated inferiorly; AEP deep and narrow, almost reaching lateral angles. MM-pleuræ and the disk with very fine, at the borders with rough, granulation.

Legs: Fore-femora rather short (♂, 28:15; ♀, 28:16); disk with fine granulation. UBF finely crenelated.

Coloration: Brown to chestnut brown; head, pronotum, hemelytra and abdomen partially blackish; fore disk of the pronotum yellow-brown; abdomen yellow or ochre-yellow; transversal band of abdomen and lateral angles of same on ventral surface, chestnut brown, partially blackish; the ventral surface of the body and the legs yellow. ♀, generally paler, and without touch of blackish.

Total length: ♂, 8.3; ♀, 8.4 mm; width of pronotum: ♂, 3.1; ♀, 3.0 mm; width of abdomen: ♂, 4.8; ♀, 5.2 mm.

Patria: The Eastern States in U. S. A.

Type: Handlirsch has not indicated either type or cotypes. *Phymata pennsylvanica* Handlirsch is a good species, and not a subspecies of either *P. americana* Melin or *P. wolffi* Stål; that is, *P. fasciata* (Gray).

56. PHYMATA ROSSI Evans, 1931. Plate 9, figs. 175-178.

Phymata Rossi EVANS, Ann. Ent. Soc. Am. 24 (1931) 720.

Male.—Head almost as long as wide across the eyes (♂, 18:17; ♀, 20:18); frontal processes short, strong, apically acute, raised and slightly divergent, projecting beyond tip of first antennal joint; preocellar processes spiculiform; ocellar processes slender, dentiform, divergent, covered with spiculæ; proportions of antennal joints are: ♂, 4:10:8:14; ♀, 5:10:11:12.

Pronotum less long than wide (♂, 33:44; ♀, 35:52); fore-border widely cut out; anterior angles angular and slightly divergent; ALA-borders slightly convex, rounded, lateral notch wide and shallow; ALP-borders slightly convex, rounded; lateral angles raised, almost vertical forming in both sexes a right angle, sometimes slightly acute, with a tip produced in a small tooth and sometimes inclined backwards; PLA-borders short, sinuated; posterior angles protruding, almost dentiform, directed out and backwards; anterior and lateral borders provided with setigerous denticulation; fore disk densely covered with setigerous spiculæ; hind disk densely granulated and more or less covered with setigerous spiculæ; carinæ divergent backwards, with setigerous granulation, and with a tubercle on top, covered with setigerous spiculæ.

Scutellum less long than wide (♂, 13:17; ♀, 14:20); median carina cruciform, covered with setigerous spiculæ; lateral borders also with setigerous teeth.

Hemelytra with dispersed setigerous granulation; membrane brown.

Abdomen less long than wide (♂, 59;67; ♀, 71:83); ♂, AL-borders almost straight, or slightly sinuated; PE-angles angulated, acute, protruding; Pe4 more protruding; lateral angles forming a slightly obtuse angle; PL-borders straight. ♀, AL-borders straight and more divergent; lateral angles forming an obtuse angle; PL-borders slightly convex; exterior borders and discs of connexiva covered with setigerous granulation.

Pleuræ: Propleuræ with setigerous spiculæ; fore-border with setigerous teeth; AEP moderately wide, deep, reaches to lateral notch. MM-pleuræ with setigerous spiculæ.

Legs: Fore-femora short (♂, 23:13; ♀, 27:14), slightly inflated; disk with setigerous spiculæ; UBF denticulated, setigerous.

Coloration: Rather variable; males generally darker, but sometimes as pale as females; ochre-yellow, ventral surface yellow; head posteriorly, lateral bands, lateral and posterior angles of pronotum, hemelytra, transversal band of abdomen, and lateral angles of same on ventral surface, brown, testaceous or blackish; lateral band of hemelytra roseate.

Total length: ♂, 7.2; ♀, 8:5 mm; width of pronotum: ♂, 2.7; ♀, 3.1 mm; width of abdomen: ♂, 4.1; ♀, 5.0 mm.

Patria: U. S. A. (Arizona, Utah, Kansas, New Mexico).

Examined specimens: 3 ♂ and 3 ♀, U. S. A., Arizona, various localities.

57. PHYMATA GRANULOSA Handlirsch, 1897. Plate 9, figs. 179–182.

Phymata erosa ssp. *granulosa* HANDLIRSCH, Ann. Naturh. Hofmus., Wein 12 (1897) 163.

Phymata granulosa MELIN, Ark. Zool. (2) 22 (1930) 15.

Phymata granulosa EVANS, Ann. Ent. Soc. Am. 24 (1931) 719.

Male.—Head small, short, as long as wide across eyes (♂, 20:20; ♀, 24:24); frontal processes short, parallel, slightly raised, notched anteriorly and slightly projecting beyond tip of first antennal joint; preocellar processes slightly raised, granulated; ocellar processes dentiform, divergent, granulated; proportions of antennal joints are: ♂, 5:9:12:21; ♀, 6:11: 14:19.

Pronotum strongly declivous anteriorly; less long than wide (♂, 40:57; ♀, 50:72); anterior border widely cut out; anterior angles angular, strong, slightly divergent; ALA-borders regularly rounded, crenelated, but not denticulated; lateral notch deep and narrow, angulated; ALP-borders very convex, rounded, crenelated; lateral angles forming an elevated, almost vertical lobe, rectangular (♂), or slightly obtuse (♀); PLA-borders almost straight, strongly declivous backwards; posterior angles strong, rectangular, directed outwards, the maximal width of the pronotum; fore disk covered with more or less dense, strong, erect, setigerous spiculæ; posterior border of fore disk, at the base of the carinæ, produced as granulated tubercles; hind disk with dispersed setigerous granulation, spiculiform or rounded; carinæ strong, divergent backwards, more anteriorly, less dense granulated posteriorly, with a high, granulated tubercle on top.

Scutellum less long than wide (♂, 13:21; ♀, 17:25); median carina cruciform, median ridge roughly, lateral branches finely granulated.

Hemelytra with fine and dispersed, rounded granulation; membrane hyaline.

Abdomen less long than wide (♂, 67:76; ♀, 86:107); on ventral surface very convex, particularly in females; AL-borders slightly sinuated (♂), or convex (♀); angles forming a right (♂), or obtuse (♀) angle; PE-angles protruding, acute; PL-borders slightly concave (♂), or slightly convex (♀), connexiva and venter with dispersed, rounded, setigerous granulation.

Pleuræ: Propleuræ with strong, erect, setigerous spiculæ, fore-border densely denticulated; AEP deep, reaches to lateral notch; MM-pleuræ with erect, setigerous spiculæ.

Legs: Fore-femora big, inflated (♂, 28:14; ♀, 31:16), with rough, setigerous granulation; UBF roughly crenelated.

Coloration: Brown to piceous, with dispersed paler spots; transversal band of abdomen, and lateral angles of the same on ventral surface, black; the transversal band of hemelytra, venter and legs yellow or ochre-yellow. Females paler, without black color.

Total length: ♂, 8.7; ♀, 10.4 mm; width of pronotum: ♂, 3.4; ♀, 4.4 mm; width of abdomen: ♂, 4.7; ♀, 6.5 mm.

Patria: Mexico, Costa Rica.

Designated lectotype: ♂, Mexico, with the label: "granulosa det. Handlirsch"; deposited in the Natural History Museum, Stockholm.

Designated allolectotype: ♀, Mexico (*Sallé*), with label: "det. Handlirsch"; deposited in the same museum.

Examined specimens: Besides holo- and allo-lectotypes, were examined also 3 ♂ & 3 ♀, Mexico (*Sallé*), cotypes of Handlirsch, from the same museum; 2 ♂ & 1 ♀, (Mexico), Jal (apa), 1 ♂, Mex (ico), ex-coll. Uhler, 1 ♀, Mex (ico), Orizaba (*E. G. Smyth*), all from U. S. National Museum, Washington; 1 ♂, Costa Rica, San Carlos (*Schild-Burgdorf*), and 1 ♂, C (osta) R (ica), San Jose (*M. Valerio*), both from the same museum.

One specimen, ♀, from Mexico, D. F. 2,300 m was aberrant, having the granulation without setæ, though all other characters were identical with the typical form of *P. granulosa* Handl.

PHYMATA GRANULOSA ssp. CHIRIQUIENSIS Melin, 1930. Plate 9, figs. 185–188.

Phymata chiriquiensis MELIN, Ark. Zool. (2) 22 (1930) 18.

Male.—Similar to *P. granulosa* Handlirsch, but ocellar processes higher and less granulated; proportions of antennal joints are: 5:9:11:20; anterior border of pronotum with remote granulæ; fore disk with single, remote, setigerous spiculæ; hind disk without granulation, only with two (1 + 1) lateral rows of setigerous spiculæ; median carina of the scutellum densely granulated, but the disk almost without granulation; hemelytra only towards tip with remote, somewhat obliterated, granulation; lateral angles of abdomen forming a slightly acute angle, PE-angles, acute protruding, Pe4 protruding; PL-borders distinctly sinuated; propleuræ with sparse granulation, foreborder less denticulated only on connexivum; fore-femora with sparse, rough, setigerous spiculæ, similar as in typical form; coloration similar to typical form.

Male.—Total length, 7.9 mm; width of pronotum, 3.1 mm; width of abdomen, 5.0 mm.

Patria: Panamá.

Type: ♂, Panama, Volcan Chriquí, 2,000 to 3,000 ft. (*Champion*); deposited in the Natural History Museum, Stockholm.

Two females from Costa Rica, Piedras Negras, I consider as belonging to this subspecies; they differ from the type of

Melin, besides by the sexual characters, also by the following: PE-angles are very long, dentiform, much longer than in the type; the coloration is much paler; yellow or pale yellow, hemelytra roseate, the transversal band of the abdomen testaceous; from the U. S. National Museum.

Female.—Total length, 9.2 mm; width of pronotum, 3.6 mm; width of abdomen, 6.3 mm.

PHYMATA GRANULOSA EVANSI ssp. nov. Plate 9, figs. 183, 184.

Male.—Similar to the typical form, and of the same color; differs from latter by frontal processes shorter, reaching tip of first antennal joint; ALA- and ALP-borders less convex, and the lateral notch wide and shallow; AL-borders sinuated anteriorly, from fourth connexivum slightly convex, with PE-angles more protruding; abdomen more dilated; proportions of antennal joints are: ♂, 5:10:11:20; ♀, 5:10:11:16.

Total length: ♂, 8.8; ♀, 9.9 mm; width of pronotum: ♂, 3.6; ♀, 4.4 mm; width of abdomen: ♂, 5.5; ♀, 6.6 mm.

Patria: Mexico, El Salvador.

Holotype.—♂, Mexico, Oax (aca), Almolaya (*F. Knab*). Deposited in the U. S. National Museum, Washington.

Allotype.—♀, Mexico, ex-collection C. F. Baker; in the same Museum.

Paratypes.—3 ♂, from Mexico (Oaxaca and Cuautla), and 1 ♀, El Salvador, San Miguel, from U. S. National Museum, Washington, 2 ♀, Mexico, from Natural History Museum, Stockholm; and 1 ♂ & 2 ♀, from Mexico, in the collection of the author.

58. **PHYMATA BREVICEPS** Stål, 1876. Plate 9, figs. 189 and 180.

Phymata breviceps Stål, Enum. Hem. 5 (1876) 133.
Phymata erosa ssp. *carneipes* Handlirsch (nec Mayr) (in partem), Ann. Naturhistor. Hofmus., Wien 12 (1897) 167.
Phymata carneipes Melin (nec Mayr); Ark. Zool. (2) 22 (1930) 18.
Phymata breviceps Kormilev, An. Soc. Cien. Agr. 152 (1951) 176.

Female.—Head short (19:20); frontal processes short, blunt, not reaching tip of first antennal joint; ocellar processes stout, blunt, covered with spiculæ; proportions of antennal joints are: 6:9:12:16.

Pronotum strongly declivous anteriorly (45°), less long than wide (42.59); fore-border deeply cut out; anterior angles rectangular, protruding forwards; ALA-borders straight, rounded posteriorly, crenelated; lateral notch distinct, but shallow, rounded; ALP-borders slightly convex, rounded; lateral angles slightly elevated, rectangular, terminated with a stout tubercle; PLA-borders short, straight; posterior angles stout, blunt, directed sideways, the maximal width of pronotum; fore disk covered with dense, erect spiculæ, but without setæ; hind disk laterally with sparse granulation; carinæ stout, raised and granulated anteriorly, parallel, then lower, divergent, and without granulation.

Scutellum less long than wide (16:24); median carina cruciform, the median ridge stout and high, without granulation; the lateral branches lower, also without granulation.

Hemelytra with sparse, dispersed granulation; membrane hyaline.

Abdomen less long than wide (68:81); AL-borders slightly convex; PE-angles slightly protruding; Pe4 somewhat more protruding; lateral angles forming a very obtuse angle; PL–borders slightly convex.

Pleuræ: Propleuræ granulated only on periphery; fore-border crenelated, denticulated inferiorly; AEP wide and deep, reaching lateral notch; MM-pleuræ finely granulated.

Legs: Fore-femora short, inflated (28:17); disk finely granulated; UBF crenelated.

Coloration: Ochre-yellow, transversal band of abdomen yellow-brown, smooth, and shiny.

Female.—Total length, 8.4 mm; width of pronotum, 3.6 mm; width of abdomen, 5.0 mm.

Patria: Colombia, Bolivia.

Type: ♀, Colombia, Bogotá (*Lindig*), with label: "breviceps Stål"; deposited in the Natural History Museum, Stockholm.

Examined specimens: Besides the type, 2 ♀, Bogotá (*Lindig*); in the same collection; 1 ♀, Bolivia, Chaparé (*R. Zischka*), in the collection of the author.

59. PHYMATA DELPONTEI Kormilev, 1950. Plate 9, figs. 191–194.

Phymata delpontei KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 583.
Phymata delpontei KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 62, fig. 2.
Phymata delpontei KORMILEV, Rev. Soc. Cient. Arg. 152 (1951) 171.
Phymata delpontei KORMILEV, Mis. Est. Pat. Reg. Arg. 22 (1951) 55.

Rather variable, specimens from Argentina slightly similar to *P. communis* Handlirsch, and those from Brazil to *P. carneipes* Mayr, but can be easily separated from both by fore disk of pronotum with erect spiculæ, without setæ; from *P. breviceps* Stål can be separated by smaller size and median carina of scutellum being lower and distinctly granulated.

Male.—Head short or very short (♂, 15:16; ♀, 17:18); frontal processes small, slightly cut out, slightly projecting beyond (typical form) or not reaching (some specimens from Brazil) tip of first antennal joint; ocellar processes small, dentiform; proportions of antennal joints are: ♂, 4:8:9:14; ♀, 5:7:9:13.

Pronotum less long than wide (♂, 30:41; ♀, 38:48); fore-border widely cut out; anterior angles blunt, slightly protruding; ALA-borders convex, rounded; lateral notch wide and deep; ALP-borders convex, rounded; lateral angles forming an obtuse angle, in females lower and rounded apically; PLA-borders short, slightly sinuated; posterior angles small, directed out and backwards; fore disk more or less (specimens from Paraguay only sparsely granulated) covered with erect spiculæ, without setæ, hind disk laterally with sparse granulation; carinæ granulated anteriorly, parallel, then divergent and with sparse granulation.

Scutellum less long than wide (♂, 10:13; ♀, 12:17); median carina cruciform, low, granulated.

Hemelytra with sparse granulation; membrane hyaline.

Abdomen less long than wide (♂, 43:48; ♀, 60:76); AL-borders slightly sinuated, from fourth connexivum slightly convex, in females convex; lateral angles forming an obtuse angle (♂), or almost rounded (♀); PL-borders slightly sinuated (♂), or convex (♀).

Pleuræ: Propleuræ with strong, erect spiculæ; fore-border inferiorly denticulated; AEP wide and deep, reaches to lateral notch; MM-pleuræ with dispersed spiculæ.

Legs: Fore-femora short, inflated (♂, 21:11; ♀, 24:14); disk finely granulated; UBF crenelated.

Coloration: Pale yellow, partially with a touch of roseate; hemelytra often violaceous, with the transversal band roseate; the transversal band of abdomen reddish-brown; females much paler; males from Paraguay darker, buff and testaceous, with transversal band of abdomen black.

Total length: ♂, 6.0 to 7.2; ♀, 7.8 to 8.0 mm (males from Argentina smallest); width of pronotum: ♂, 2.3 to 2.9; ♀, 3.0 mm; width of abdomen: ♂, 3.0 to 4.4; ♀, 4.7 to 5.5 mm.

Patria: Argentina, Brazil, Paraguay, Bolivia.

Type: ♂, Argentina, Misiones, Puerto Bemberg (*Dr. K. J. Hayward, Dr. A. Willink,* and *R. Golbach*); deposited in the "Instituto Lillo," Tucumán, Argentina.

60. PHYMATA GUÉRINI Lethierry & Severin, 1896. Plate 9, figs. 195–197.

Syrtis (*Phymata*) *erosa* GUÉRIN (nec Linnæus), Sagra Hist. Cuba (1857) 406.

Phymata guérini LETHIERRY & SEVERIN, Cat. Gén. Hém. Hét. 3 (1896) 28.

Phymata erosa ssp. *guérini* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 164.

Male.—Head short (♂, 18:19; ♀, 20:20); frontal processes short, stout, acute apically, not reaching tip of first antennal joint; ocellar processes short, stout, granulated; proportions of antennal joints are: ♂, 4.5:8:10:16; ♀, 5:11:10:14. Granulation setigerous, with short setæ.

Pronotum strongly declivous anteriorly, less long than wide (♂, 40:54; ♀, 48:65); anterior lobe much narrower than posterior (♂, 31:54; ♀, 38:65); fore-border deeply cut out; anterior angles angular, stout, directed forwards; ALA-borders slightly sinuated anteriorly, then convex, rounded; lateral notch wide and deep, rounded; ALP-borders convex, rounded; lateral angles almost vertical, somewhat produced in both sexes, forming an acute angle; PLA-borders very short and angularly cut out; posterior angles approximated to the lateral angles, protruding out and backwards, acute; PLP-borders almost twice as long as PLA-borders; fore disk with fine and sparse setigerous granulation, at base of carinæ raised posteriorly forming high tubercles (1 + 1); hind disk deeply punctated and with dispersed setigerous granulation; carinæ strong, divergent backwards, with a high tubercle on top.

Scutellum less long than wide (♂, 11:17; ♀, 14:20); median carina subcruciform, sparsely granulated.

Hemelytra with dispersed setigerous granulation; membrane brown.

Abdomen laterally dilated AL-borders at base straight, from middle of third connexivum abruptly dilated (♂), or straight (♀); PE-angles slightly protruding; Pe4 more protruding, acute (♂), or rather blunt (♀); lateral angles forming an acute (♂), or obtuse (♀) angle: PL-borders slightly sinuated (♂), or convex, rounded (♀); connexiva with sparse granulation; venter with dispersed setigerous granulation.

Pleuræ: Propleuræ divided into two lobes by a line which runs from the lateral notch downwards, anterior lobe without punctation but with sparse granulation, posterior lobe without granulation but densely punctated; fore-border denticulated inferiorly; MM-pleuræ almost without granulation.

Legs: Fore-femora inflated, short (♂, 23:12; ♀, 27:15), disk with and indistinct setigerous granulation; UBF crenelated with setigerous granulæ.

Coloration: Ochre-yellow, partially testaceous; head posteriorly black; lateral bands and lateral angles of pronotum, and hemelytra brown to testaceous; transversal band of hemelytra whitish; transversal band of abdomen, and lateral angles of same on ventral surface, dark brown, variegated with yellow; forelegs testaceous, middle and hind legs yellow.

Total length: ♂, 7.4; ♀, 9.2 mm; width of pronotum: ♂, 3.3; ♀ 4.0 mm; width of abdomen: ♂, 4.5; ♀, 6.2 mm.

Patria: Cuba.

Handlirsch wondered that Stål has erroneously considered two specimens of *P. guérini*, from Natural History Museum in Stockholm, as *P. acutangula* Guérin, and stated: "Es wundert mich sehr, dass Stål diese Subspecies als *acutangula* Guérin gedeutet hat, denn sie stimmt gar nicht mit Guérin's Beschreibung dieser Art überein, dagegen aber ganz gut mit jener der cubanischen Exemplare von *erosa* Guérin." [(1897) 164]. But Handlirsch himself has made much bigger error when he synonymized three species of Stål with long head (*P. longiceps*, *P. simulans*, and *P. acuta*), with the species of Guérin (*P. acutangula*) with very short head; these species of Stål "stimmem auch nicht mit Beschreibung von Guérin."

Examined specimens: 1 ♂ & 1 ♀, Cuba, Habana, Santiago de las Vegas identified by Dr. C. S. Bruner, from the collection of the author; 1 ♂, Cuba, with labels; "Stål," "acutangula Guérin," and "Guérini det. Handlirch"; 1 ♂, Cuba, with labels: "Dohrn" and "acutangula," both from Natural History Museum, Stockholm.

Some females of *P. granulosa evansi* ssp. nov., *P. guérini* Leth. and Sev., *P. conspicua* Scott, and *P. colombiana* sp. nov., are rather alike and difficult to separate from each other, but the following additional key may help this separation.

1. Granulation of the body, particularly of head and pronotum, setigerous 2.
   Granulation of body without setæ .... 3.
2. Pronotum with fore disk covered with setigerous spiculæ; PLA-borders of same slightly sinuated; posterior angles blunt, and slightly protruding .... *P. granulosa evansi* ssp. nov.
   Pronotum with fore disk covered with setigerous granulæ, not spiculæ; PLA-borders short and angularly cut out; posterior angles dentiform, acute, protruding .... *P. guérini* Leth. and Sev.

3. Body opaque and scabrous, with dispersed, pale granulation, very conspicuous .... *P. conspicua* Scott.
   Body smooth and shiny, similar to China, almost without granulation, latter very fine and inconspicuous .... *P. colombiana* sp. nov.

61. **PHYMATA BIRABENI Kormilev, 1950.** Plate 12, figs. 247 and 248.

Phymata birabeni KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 582.
Phymata birabeni KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 62, fig. 1.

Female.—Head short (14:13); frontal processes short, blunt, slightly notched; ocellar processes small, dentiform; proportions of antennal joints are: 4:9:11:14.

Pronotum less long than wide; anterior border slightly sinuated; anterior angles blunt, not protruding; ALA-borders almost straight, crenelated, rounded posteriorly, lateral notch deep, rounded; ALP-borders convex, rounded; lateral angles slightly raised, forming an obtuse angle; PLA-borders slightly sinuated; posterior angles blunt, not protruding; fore disk finely granulated; hind disk without granulation; carinæ elevated anteriorly, parallel and granulated, then divergent and without granulation; at the base, on posterior border of fore disk, with high, round tubercle.

Scutellum less long than wide (8:10); median carina cruciform, granulated.

Hemelytra with fine and sparse granulation; membrane hyaline.

Abdomen less long than wide (42:52); AL-borders slightly sinuated, from the fourth connexivum slightly convex; PE-angles scarcely protruding; lateral angles rectangular; PL-borders straight.

Legs: Fore-femora short, inflated (16:9); disk without granulation; UBF crenelated.

Coloration: Mahogany-red, testaceous and ivory.

Female.—Total length, 6.2 mm; width of pronotum, 2.3 mm; width of abdomen, 3.6 mm.

Patria: Argentina.

Type: ♀, Argentina, Misiones, Iguazú (*Dr. M. Biraben*). Deposited in the La Plata Museum, La Plata.

62. **PHYMATA ARCTOSTAPHYLÆ Van Duzee, 1914.** Plate 18, figs. 357, 358.

Phymata erosa ssp. *arctostaphylæ* VAN DUZEE, Trans. San Diego Soc. Nat. Hist. 2 (1914) 11.
Phymata arctostaphylæ EVANS, Ann. Ent. Soc. Am. 24 (1931) 719.

I could not examine the type of Van Duzee (♂); but in reply to my request, Dr. R. L. Usinger kindly sent me a female.

Female.—Head longer than wide across eyes (21:19.5); frontal processes long, raised anteriorly, pointed apically and deeply notched; preocellar processes slender, granulated, raised above dorsal level of head; ocellar processes low, granulated, dentiform apically; proportions of the antennal joints are: 6:10:11:20. Neither Van Duzee nor Evans said something about antennæ of male, but judging by female, male should have fourth segment distinctly longer than second and third together.

Pronotum less long than wide (43:66); fore-border widely sinuated; anterior angles short, angulated, directed forwards; ALA-borders slightly, but regularly, rounded; lateral notch short, but rather deep, angular; ALP-borders strongly convex, rounded; lateral angles raised, produced apically into a long, pointed, tooth; PLA-borders long, distinctly sinuated; posterior angles protruding back and sideways, forming an acute angle; PLP- and posterior border straight; fore disk with round granulation; hind disk with fine and sparse granulation anteriorly and laterally; carinæ sharply marked, high, divergent backwards; slightly inflated and granulated on top, posteriorly almost without granulation. Granulation of body fine, rounded, and paler than background, therefore very conspicuous.

Scutellum less long than wide (14:20); median carina subcruciform, almost linear; median ridge roughly, lateral branches finely and sparsely granulated.

Hemelytra with very fine dispersed, pale, granulation; membrane brown, shiny.

Abdomen as long as wide (85:85); AL-borders scarcely sinuated, almost straight, from the fourth connexivum slightly convex; PE-angles angulated, scarcely protruding; Pe4 forming an acute angle (about 45°) with a blunt apex, but provided on tip with a small, acute tooth, directed upwards; lateral angles forming a slightly obtuse angle; PL-borders and posterior border slightly convex, rounded; tergum and connexivum with very fine, dispersed granulation.

Pleuræ: Propleuræ with very fine, dispersed granulation, along AEP with dense and rough granulation; fore-border finely and remotely denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ with very fine, almost imperceptible granulation.

Legs: Fore-femora twice as long as wide (31:15); inflated; disk along upper border with very fine, setigerous granulation; UBF finely denticulated.

Coloration: On dorsal surface dark mahogany brown, at lateral angles and on fore disk of pronotum darker, dark brown; band across third connexivum and transversal band of abdomen blackish; ventral surface red, with a touch of roseate, almost sanguineous.

Total length: ♂, 9.0 (according to Van Duzee); ♀, 10.0 mm; width of pronotum; ♀, 4.1 mm; width of abdomen: ♂, 5.0; ♀, 5.1 mm.

Patria: U. S. A. (California).

Examined specimen: ♀, U. S. A., California, S. Bernardo Co., Forest Home Rd. (*McCracken*); from the collection of Dr. R. L. Usinger, Berkeley, California, U. S. A.

Van Duzee indicated this species is allied to *P. fasciata* (Gray). But it has also affinity with *P. pennsylvania* Handlirsch, the long fourth antennal joint and the shape of the abdomen prove that.

63. PHYMATA FASCIATA (Gray), 1832. **Plate 10, figs. 198-210.**

Acanthia erosa WOLFF, Icones Cimicum; Fasc. 3 (1802) 89, Plate 9, fig. 83.

Syrtis fasciatus GRAY in Griffith Class. Ins. 2 (1832) 242, Plate 93, fig. 3.

Phymata wolffi STÅL, Enum. Hem. 5 (1876) 133.

Phymata erosa ssp. *fasciata* HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 161.

Phymata fasciata ssp. *georgiensis* MELIN, Ark. Zool. (2) 22 (1930) 9, fig. 12.

Phymata fasciata ssp. *georgiensis* EVANS, Ann. Ent. Soc. Am. 24 (1931).

Phymata fasciata (Gray) (1832) is a superspecies with big area of distribution, forming various subspecies, difficult to separate from each other. Generally can be separated four principal types, which are not sharply limited, but forming various intermediate forms, as it occurs with all superspecies of Phymatinæ. The typical subspecies is, as I have mentioned in the general remarks, *Phymata fasciata georgiensis* Melin, and not *mexicana*, as Evans has erroneously selected. This subspecies is not limited to the southern states of U. S. A., but penetrates deeply into Mexico, where another subspecies, *P. fasciata mexicana* Melin, is also distributed. We have no data yet which could permit to judge about their microambients and exact area of distribution. The principal characters which separate these two subspecies between each other are: *P. fasciata fasciata* (Gray), the typical subspecies, has the ALP-borders of the pronotum rounded and less convex, the PE-angles of the connexiva more protruding, dentiform, though in the specimens from Mexico this last character is not so developed as in the specimens from U. S. A. *P. fasciata mexicana* Melin has ALP-borders very convex, often subangular, lateral angles of the pronotum more vertical, and PE-angles less protruding. One subspecies more, *P. fasciata mystica* Evans, is distributed in Florida, Luisiana, and Texas, described as a species, which is characterized by spiniform lateral and posterior angles of the pronotum, and strongly dilated abdomen, the PE-angles are shorter than in the typical subspecies. The fourth subspecies, *P. fasciata panamensis* ssp. nov., is distributed in Panama and Costa Rica, which is shorter than *P. fasciata mexicana* and more dilated laterally. The pronotum is slender, not so robust as in *mexicana*, and the fore disk with slender erect spiculæ, and not rounded granulation.

PHYMATA FASCIATA FASCIATA (GRAY). 1832. Plate 10, figs. 198–210.

Acanthia erosa WOLFF (nec Linnæus), Icon. Cim. Fasc. 3 (1802) 89, Plate 9, fig. 83.

Syrtis fasciatus Gray in GRIFFITH Class. Ins. 2 (1832) 242, Plate 93, fig. 3.

Phymata fasciata georgiensis MELIN, Ark. Zool. (2) 22 (1930) 9, fig. 12.

Phymata fasciata georgiensis EVANS, Ann. Ent. Soc. Am. 24 (1931) 717.

Male.—Head longer than wide across eyes (♂, 20:19; ♀, 24:20); frontal processes stout, blunt and slightly raised anteriorly, notch deep; preocellar processes slightly raised and covered with spiculoid granulation; ocellar processes dentiform, inclined forwards, granulated with spiculæ; proportions of antennal joints are: ♂, 6:8:11:15; ♀, 6:10:11:14.

Pronotum less long than wide (♂, 38:55; ♀, 45:65); strongly declivous anteriorly (45°); fore-border deeply sinuated; anterior angles strong, dentiform directed forwards; ALA-borders rounded or subangulated, sometimes terminated with a small tooth; lateral notch wide and deep; ALP-borders convex, rounded; lateral angles forming an acute or slightly obtuse angle, sometimes slightly drawn out, generally inclined sideways; PLA-borders almost straight, sometimes slightly concave; posterior angles dentiform, directed out and backwards; fore disk sparsely granulated with almost spiculoid granulæ, but lying; hind disk with sparse granulation and ocellated punctation; carinæ strong, divergent backwards, granulated anteriorly, forming a ridge or tubercle on top.

Scutellum less long than wide (♂, 14:18; ♀, 18:23); median carina subcruciform, granulated.

Hemelytra without granulation.

Abdomen less long than wide (♂, 65:81; ♀, 75:109); AL-borders firstly sinuated, from fourth connexivum slightly convex; PE-angles more or less dentiform, protruding, sometimes very protruding; Pe4 forming an acute angle, but with blunt tip; PL-borders almost straight.

Pleuræ: Propleuræ with sparse granulation; fore-border denticulated inferiorly; AEP wide and deep, reaching lateral notch; MM-pleuræ almost without granulation.

Legs: Fore-femora short, inflated (♂, 27:14; ♀, 29:17); disk with very fine granulation; UBF finely crenelated.

Coloration: Ochre-yellow to buff and brown, with touch of roseate; antennal excavation of head, occiput, median depression of hind disk of pronotum, meso- and meta-sternum, piceous to black; fourth antennal joint, median triangle of fore disk of pronotum, lateral bands and lateral angles of same, scutellum laterally, transversal band and lateral angles of abdomen on ventral surface, yellow-brown to walnut-brown; anterior angles, lateral notch of pronotum and connexiva I to III whitish; hemelytra reddish-brown with touch of roseate transversal band of same paler; ♀, paler, without piceous or black color.

Total length: ♂, 8.4; ♀, 9.7 mm; width of pronotum: ♂, 3.3; ♀, 4.0 mm; width of abdomen: ♂, 4.9; ♀, 6.6 mm.

Patria: U. S. A., Mexico.

Designated neotype.—♂, U. S. A., Georgia (*Morrison*) (type of *Phymata fasciata georgiensis* Melin). Deposited in the Natural History Museum, Stockholm.

Designated neoallotype.—♀, U. S. A., Georgia (*Morrison*) (allotype of *Phymata fasciata georgiensis* Melin. Deposited in the same museum.

Examined specimens: 1 ♂, U. S. A., Georgia, (*Morrison*); 1 ♀, U. S. A., Carolina with label "Germar"; 1 ♀, U. S. A., Texas (*Belfrage*); all from the Natural History Museum, Stockholm; 3 ♂ & 1 ♀, Mexico, Tlahualilo (*A. W. Merrill*); 1 ♂, Mexico, Rocky Cliff, south of Hermosillo (*E. A. McGregor*); 1 ♂, Mexico, Gulf Coast, 15 mi. below Guayas (*E. A.*

McGregor); 1 ♂, Mexico, Tomazunchale; 2 ♂ & 2 ♀, Mexico; 1 ♂, Mexico, Aguas Calientes (*E. A. Schwarz*); 1 ♀, Mexico, Saltillo (*Wickham*); all from U. S. National Museum, Washington; various specimens from U. S. A., Mississippi (Charleston), Luisiana (Baton Rouge), Arizona (Santa Modiera Canyon), and Texas (Dallas), from the collection of the author.

PHYMATA FASCIATA MYSTICA Evans, 1931. Plate 10, figs. 205-207.

Phymata mystica EVANS, Ann. Ent. Soc. Am. 24 (1931) 717.

Male.—Head slightly longer than wide across eyes (♂, 21:19; ♀, 19:19); frontal processes more or less acute, slightly raised, and more or less deeply notched; preocellar processes slightly raised, granulated; ocellar processes dentiform granulated, divergent; proportions of antennal joints are: ♂, 5:9:11:19; ♀, 5:8:11:16.

Pronotum less long than wide (♂, 37:58; ♀, 40:65); foreborder deeply sinuated; anterior angles dentiform, protruding forwards; ALA-borders convex, rounded, crenelated; lateral notch deep, and generally less wide than in the typical subspecies; ALP-borders moderately convex, rounded, crenelated; lateral angles in both sexes drawn out into long and acute teeth; PLA-borders deeply sinuated; posterior angles also dentiform or spinelike, directed out and backwards; fore disk with rounded granulæ, sometimes somewhat spiculoid, then lying, granulation; carinæ with high tubercles on top.

Abdomen much dilated laterally, distinctly less long than wide (♂, 65:92; ♀, 72:99); AL-borders strongly sinuated, from the fourth connexivum convex (♂), or almost straight (♀); PE-angles dentiform, but less protruding than in the typical subspecies; lateral angles in both sexes forming acute angle; Pe4 acute and protruding.

Total length: ♂, 8.4; ♀ 8.9 mm; width of pronotum, ♂; 3.5; ♀, 3.9 mm; width of abdomen ♂, 5.7; ♀, 6.1 mm.

Patria: U. S. A.

Examined specimens: various specimens from U. S. A., Florida (Dunedin, Miami, Paradise Key, Alachua Co., etc.), Luisiana (Ruster), all from the collection of the author.

PHYMATA FASCIATA MEXICANA Melin, 1930. Plate 10, figs. 202-204.

Phymata fasciata mexicana MELIN, Ark. Zool. (2) 22 (1930) 10, fig. 13.

Phymata fasciata fasciata EVANS, Ann. Ent. Soc. Am. 24 (1931) 716.

Male.—Head as long or slightly longer than wide across eyes (♂, 20:20; ♀, 23:21); frontal processes strong, directed up and slightly forwards, and divergent; ocellar processes dentiform; granulation spiculoid, lying, on occiput erect; proportions of antennal joints are: ♂, 6:9:11:19; ♀, 6:10:14:19.

Pronotum less long than wide (♂, 42:59; ♀, 50:70); fore-border deeply sinuated; anterior angles strong, angular and slightly divergent; ALA-borders convex, angulated or blunt, roughly crenelated; lateral notch wide and deep; ALP-borders very convex, rounded or subangulated; lateral angles very much raised and generally terminated with a strong tooth; PLA-borders scarcely sinuated; posterior angles angular, stout, directed out and backwards; fore disk with sparse spiculæ more or less erect; hind disk also with sparse spiculæ, more or less erect; hind disk also with sparse spiculæ or spiculoid granulæ; carinæ high, divergent backwards, with a ridge or strong tubercle on top.

Abdomen less long than wide (♂, 69:92; ♀, 80:130); laterally strongly dilated; AL-borders slightly sinuated, from fourth connexivum slightly convex (♂), or almost straight (♀); PE-angles protruding as stout tubercle, or angles, in the specimens from Guatemala and Costa Rica less protruding; lateral angles in both sexes forming an acute angle, sometimes, in some females almost straight angle.

Legs: Fore-femora relatively small (♂, 25:15; ♀, 32:16); disk granulated; UBG roughly crenelated.

Coloration: ♂, Ochre-yellow and black, or piceous; ♀, ochre-yellow and brown.

Total length: ♂, 8.7; ♀, 10.1 mm; width of pronotum: ♂, 3.5; ♀, 4.4 mm; width of abdomen: ♂, 5.5; ♀, 8.1 mm.

Patria: Mexico, Guatemala, Costa Rica.

Type: ♂, Mexico (*Sallé*); deposited in the Natural History Museum, Stockholm.

Examined specimens: 1 ♀, Mexico (*Baucarol*), the allotype of Melin; 1 ♂, Mexico (*Sallé*); 1 ♂, Mexico (*Baucarol*); 1 ♂ & 1 ♀, Mexico, Temax, N. Yucatan; all are the paratypes of Melin, deposited in the Natural History Museum, Stockholm; 1 ♀, Guatemala, Antiqua (*E. G. Smyth*); 1 ♀, Guatemala, Acantenango (*H. T. Dalmat*); 1 ♀, Guatemala, Yepocapa (*H. T. Dalmat*) and 1 ♂, Costa Rica, Tucurrique (*Schild-Burgdorf*); all in the U. S. National Museum, Washington; 1 ♀, Costa Rica, Waldeck-farm near Matina (*E. Reimoser*); from Natural History Museum, Vienna.

PHYMATA FASCIATA PANAMENSIS ssp. nov. Plate 10, figs. 208–210.

Male.—Head longer than wide across the eyes (20:19); frontal processes long and relatively slender, deeply cut out, slightly divergent; ocellar processes dentiform, divergent, granulated; the proportions of the antennal joints are: 5:10:10:20.

Pronotum less long than wide (45:60); fore-border deeply cut out; anterior angles angular, strong, directed forwards; ALA-borders convex, forming a sharply marked obtuse angle; lateral notch very deep and rounded; ALP-borders very protruding, forming a right angle, with blunt tip; lateral angles raised and terminated with long tooth, slightly inclined sideways; PLA-borders distinctly sinuated; posterior angles small, angulated; fore disk with fine and erect spiculæ; hind disk deeply punctated, laterally with erect spiculæ; carinæ elevated, granulated anteriorly and with a high tubercle on top.

Scutellum less long than wide (14:20); median carina high, granulated, subcruciform.

Hemelytra with sparse granulation of erect spiculæ.

Abdomen less long than wide (65:100), strongly dilated; AL-borders distinctly sinuated, from the fourth connexivum slightly convex; PE-angles protruding as long and slender teeth; lateral forming an acute angle; Pe4 very protruding and acute; PL-borders scarcely sinuated.

Pleuræ: The fore-border of the propleuræ denticulated; disk with spiculoid granulæ, more or less lying, AEP wide and deep; reaching lateral notch.

Legs: Fore-femora twice as long as wide (28:14); inflated; disk with rough granulation; UBF crenelated.

Coloration paler than in *P. fasciata mexicana*, pale yellow and brown.

Male.—Total length, 8.2 mm; width of pronotum, 3.6 mm; width of abdomen, 6.1 mm.

Patria: Panama, Costa Rica.

Holotype.—♂, Panama, Canal Zone, Barro Colorado, July to August, 1942 (*Jas. Zetek*). Deposited in the U. S. National Museum, Washington.

Allotype.—♀, Costa Rica, Rio Reventazon, F. Hamburg (*E. Reimoser*). Deposited in the Natural History Museum, Vienna.

Paratypes.—3 ♂, collected with the holotype; deposited in the U.S. National Museum, Washington, and in the collection of the author.

I call attention to the fact that in this superspecies, as in another superspecies, *Phymata* (*Phymatispa*) *fortificata* H. Sch., the length of the fourth antennal joints of the males is increasing in the subspecies distributed nearer to the equator.

64. PHYMATA AMERICANA Melin, 1930. Plate 10, figs. 211–212; Plate 18, figs. 359–360.

Phymata fasciata HANDLIRSCH (nec Gray) (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 161, Plate 5, fig. 8.
Phymata americana wisconsina MELIN, Ark. Zool. (2) 22 (1930) 6.
Phymata americana coloradensis MELIN, idem. (2) 22 (1930) 7.
Phymata americana ottawensis MELIN, idem. (2) 22 (1930) 7.
Phymata pennsylvanica coloradensis EVANS, Ann. Ent. Soc. Am. 24 (1931) 715.
Phymata pennsylvanica coloradensis EVANS, idem 24 (1931) 716.
Phymata americana KORMILEV, Mis. Est. Pat. Reg. Arg. 24 (1953) 66.

Phymata americana Melin (1930), the commonest North-American species of the genus *Phymata* Latr., is also a superspecies, with more or less separated local subspecies. In general we can distinguish two big subspecies: *P. americana americana* Melin and *P. americana coloradensis* Melin; the first distributed in the eastern states of U. S. A., penetrating somewhat in Canada and Mexico; the latter in the western states, also penetrating somewhat in Mexico. *P. americana* is rather allied to *P. fasciata* (Gray), though is not either subspecies, or identical with the latter, as it has been considered by Handlirsch. It is still less allied to *P. pennsylvanica* Handlirsch, and by no means can be considered as its subspecies either, though Melin and Evans have united it in the same species with the latter [*see* Kormilev, N. A. Notas sobre Phymatidæ Neárcticas, I: Mis. Est. Pat. Reg. Arg. 24 (1953) 66].

PHYMATA AMERICANA AMERICANA Melin, 1930. Plate 10, figs. 211–212.

Phymata americana wisconsina MELIN, Ark. Zool. (2) 22 (1930) 6.
Phymata americana ottawensis MELIN, idem. (2) 22 (1930) 7.
Phymata pennsylvanica americana EVANS, Ann. Ent. Soc. Am. 24 (1931) 175.
Phymata americana americana KORMILEV, Mis. Est. Pat. Reg. Arg. 24 (1953) 66.

Male.—Head longer than wide across the eyes (♂, 21:19; ♀, 22:20); frontal processes strong, slightly raised, deeply cut out; preocellar processes dentiform, inclined forwards, and covered with spiculæ; ocellar processes generally slender, elevated and ramificated, with sparse spiculæ; the proportions of the antennal joints are: ♂, 5:9:11:18; ♀, 5:9:11:16.

Pronotum less long than wide (♂, 38:53; ♀, 42:58); strongly declivous anteriorly; fore-border deeply cut out; anterior angles dentiform, directed forwards; ALA-borders scarcely convex, rounded posteriorly, crenelated; lateral notch rather wide, angulated; ALP-borders convex, rounded; lateral angles relatively low, forming an obtuse, sometimes almost rounded, angle, not drawn out; PLA-borders short, sinuated; posterior angles angulated or dentiform, often maximal width of pronotum; fore disk granulated with rounded or subspiculoid granulæ; hind disk laterally with sparse spiculoid granulation; carinæ divergent backwards; with more or less distinct ridge on top.

Scutellum less long than wide (♂, 14:19; ♀, 15:20); median carina subcruciform, granulated.

Hemelytra without granulation, rarely with fine and sparse granulation; membrane brown.

Abdomen longer than wide (♂), or less long than wide (♀), (♂, 70:67; ♀, 83:86); AL-borders straight (♂), or convex (♀) in a continuous line, not abruptly dilated from the fourth connexivum; PE-angles angularly protruding; Pe4 more protruding, acute (♂), or almost rectangular (♀); lateral angles forming an obtuse (♂), or almost rounded (♀) angle; PL-borders in both sexes slightly convex.

Pleuræ: Propleuræ finely granulated; fore-border inferiorly denticulated; AEP wide and deep, reaching lateral angles; MM-pleuræ granulated at the periphery.

Legs: Fore-femora short (♂, 29:15; ♀, 31:17); disk with fine granulation at the upper border; UBF crenelated.

Coloration: ♂, yellow with brown, piceous and black; ♀, yellow with brown and dark brown.

Total length: ♂, 8.5; ♀, 9.5 mm; width of pronotum: ♂, 3.2; ♀, 3.5 mm; width of abdomen: ♂, 4.0;; ♀, 5.2 mm.

Patria: Eastern States in U. S. A., Canada, Mexico.

Type: ♂, U. S. A., Wisconsin (*Kumlien*); deposited in the Natural History Museum, Stockholm.

Examined specimens: Besides the type, the allotype and paratypes of *Phymata americana wisconsina* Melin, the holo-, allo- and paratypes of *Phymata americana ottawensis* Melin, all from Natural History Museum in Stockholm; various specimens from U. S. A. (Vermont, Illinois, Minnesota, Texas), and 1 ♂, Mexico, Aguas Calientes (*E. A. Schwarz*), all from the collection of the author.

PHYMATA AMERICANA COLORADENSIS Melin, 1930.

Phymata americana coloradensis MELIN, Ark. Zool. (2) 22 (1930) 7.
Phymata pennsylvanica coloradensis EVANS, Ann. Ent. Soc. Am. 24 (1931) 716.
Phymata americana coloradensis KORMILEV, Mis. Est. Pat. Reg. Arg. 24 (1953) 66.

Male.—In general similar to the typical subspecies, but slightly bigger, ocellar processes are lower, more granulated and less ramificated; PE-angles of connexiva more protruding. Coloration of males slightly paler, yellow with brown and reddish-brown, but without touch of roseate.

Biometrical measures: head, ♂, 21:22; ♀, 26:23; pronotum, ♂, 45:67; ♀, 52:75; abdomen, ♂, 90:89; ♀, 95:115; fore-femora, ♂, 31:17; ♀, 36:21; proportions of antennal joints are: ♂, 6:10:11:17; ♀, 7:12:13:18.

Total length: ♂, 19.3; ♀, 12.0 mm; width of pronotum: ♂, 4.1; ♀, 4.6 mm; width of abdomen: ♂, 5.3; ♀, 7.1 mm. The specimens from Mexico are smaller, about 9 mm.

Patria: U. S. A. (Western States), Mexico.

Type: ♂, U. S. A., Colorado (*Morrison*); deposited in the Natural History Museum, Stockholm.

Examined specimens: besides the type, 3 ♂ and 4 ♀, U. S. A., Colorado (Morrison) (paratypes), in the same museum; various specimens from Arizona, Oklahoma, Texas, Colorado, all from the collection of the author; 1 ♂, Mexico, Vera Cruz (*F. Knab*); 3 ♂, Mexico, Saltillo (*Wickham*), all from the U. S. National Museum, Washington.

PHYMATA AMERICANA METCALFI Evans, 1931. Plate 18, figs. 359-360.

Phymata metcalfi EVANS, Ann. Ent. Soc. Am. 24 (1931) 723.

Male.—Similar to *P. americana coloradensis* Melin, but much smaller, frontal processes relatively stouter and more deeply notched; the preocellar and ocellar processes smaller, granulated and divergent; lateral notch of the pronotum smaller and shallow; carinæ finer and neither elevated as a rooflike ridge, nor provided with a tubercle, only slightly inflated on top; Pe4 less protruding and blunt apically; lateral angles are not so sharply marked as in *americana americana* or *americana coloradensis;* in other characters similar to *coloradensis;* coloration: pale yellow, with brown and black.

The striking green color, which so impressed Evans that he made it a species and not a subspecies of *americana*, probably was due to the immature state of the examined specimens, similar to what occurs also in other species, such as *phymata chilensis cordobensis* or *Phymata chilensis uruguayensis*.

Biometrical measures: ♂, head, 20:18; pronotum, 35:52; scutellum, 13:19; abdomen 63:68; fore-femora, 25:13; and the proportions of the antennal joints are: 4.5:9:10:17.

Male.—Total length, 8.2 mm; width of pronotum, 3.1 mm; width of abdomen, 4.2 mm.

Patria: U. S. A. (NW States).

Examined specimen: 1 ♂, U. S. A., Nevada, Reno (*Dr. I. La Rivera*); identified by H. H. Welsh as *Phymata wolffi metcalfi* Evans; from the collection of Dr. R. L. Usinger, Berkeley, U. S. A.

I cannot agree with the identification of Welsh because, as I have stated before that, *P. wolffi* Stål is a synonym of *P. fasciata* (Gray), and *metcalfi* is a subspecies of *americana* and not *fasciata*.

65. PHYMATA ATRA Melin, 1930. Plate 10, figs. 213-215.

Phymata atra MELIN, Ark. Zool. (2) 22 (1930) 22, fig. 23.

Male.—Very long, narrow, and rather flat; pronotum is as wide as the abdomen. The females are not known yet.

Head slightly longer than wide across the eyes (20:18); frontal processes short, blunt, slightly notched anteriorly; ocellar processes short, tuberculiform; the proportions of the antennal joints are: 5:10:11:16.

Pronotum less long than wide (35:51); strongly declivous anteriorly; fore-border scarcely sinuated; anterior angles blunt, not protruding; ALA-borders slightly convex, rounded posteriorly, crenelated; lateral notch wide and deep, subangulated; ALP-borders short, slightly convex; lateral angles moderately raised, forming obtuse angle; PLA-borders straight; posterior angles small, angulated, directed sideways; fore disk finely granulated; hind disk laterally somewhat granulated, near lateral angles rugose; carinæ high, slightly divergent backwards, granulated anteriorly.

Scutellum less long than wide (10:16); median carina stout, subcruciform, granulated.

Hemelytra anterior and with sparse granulation posteriorly; membrane piceous.

Abdomen much longer than wide (70:50); AL-borders straight; PE-angles not protruding, tuberculiform; lateral angles forming a very obtuse angle (about 150°) but sharply marked; PL-borders scarcely sinuated; posterior border almost truncated.

Pleuræ: Propleuræ with dispersed granulation, fore-border crenelated inferiorly with a few small teeth; AEP wide and deep, reaching lateral angles; MM-pleuræ with dispersed granulation.

Legs: Fore-femora short (25:13), inflated, very finely granulated; UBF finely crenelated.

Coloration black, piceous, testaceous and yellow; yellow are: head laterally, fore disk and lateral notch of pronotum, median carina and tip of scutellum, connexiva, with exception of transversal band, whole ventral surface, with exception of meso- and metapleuræ, median and hind legs; testaceous are: antenna, forelegs, upper and inferior borders of mesopleuræ and whole, metapleuræ; piceous are: hind disk of pronotum in middle, and hemelytra; black are: head on dorsal surface, hind disk of pronotum laterally, transversal band of abdomen, middle of mesopleuræ, and lateral angles of abdomen on ventral surface.

Male.—Total length, 5.0 mm; width of pronotum, 3.0 mm; width of abdomen, 3.0 mm.

Patria: Bolivia.

Type: ♂, Bolivia, Chaco; deposited in the Natural History Museum in Stockholm.

Examined specimens: besides the type, 1 ♂, Bolivia, San Antonio (*O. Garlepp*), in the same museum; 2 ♂, Bolivia, Yungas, Chaparé (*Rev. Dr. A. Bridarolli, S. J.*), 1 ♂, Bolivia, Yungas (*Rev. G. Williner, S. J.*) and 1 ♂, Bolivia, Yungas, Coroico (*A. Martinez*); from the collections of the San Miguel Institute of Natural Science, Buenos Aires Province, and from the collection of the author.

66. PHYMATA BORICA Evans, 1931. Plate 10, figs. 216-218.

Phymata borica EVANS, Ann. Ent. Soc. Am. 24 (1931) 721.

Rather variable, in general it is somewhat similar to *P. americana coloradensis* Melin, but much smaller.

Male.—Head short (♂, 17:20; ♀, 20:19); frontal processes very short, blunt, not reaching tip of first antennal joint, or slightly longer, deeper notched anteriorly; ocellar processes dentiform, granulated, divergent, rather low; proportions of antennal joints are: ♂, 6:9:10:18; ♀, 6:9:11:17.

Pronotum less long than wide (♂, 34:46; ♀, 45:52); anteriorly declivous (about 45°); posteriorly flat; fore-border widely sinuated; anterior angles short, blunt, sometimes slightly longer, rectangular; ALA-borders slightly convex, crenelated; lateral notch small and shallow, sometimes almost absent; ALP-borders scarcely convex, crenelated; lateral angles low, forming an obtuse angle, sometimes slightly higher, subrectangular; PLA-borders very short, straight or slightly sinuated; posterior angles small, slightly protruding sideways; fore disk with sparse, almost spiculoid lying, granulation; hind disk punctated, somewhat rugose, but almost without granulation; carinæ high, slightly divergent backwards, sometimes slightly inflated on top, but without tubercle or ridge.

Scutellum less long than wide (♂, 15:20; ♀, 15:20); median carina subcruciform, granulated.

Hemelytra without granulation, membrane brownish.

Abdomen as long or scarcely less long than wide (♂, 60:60; ♀, 70:72); AL-borders scarcely (♂), or slightly (♀) convex in a continuous line, PE-angles scarcely protruding, angulated or tuberculiform; Pe4 scarcely protruding; lateral angles forming an obtuse (♂), or almost rounded (♀) angle; PL-borders straight (♂), or convex (♀).

Pleuræ: Propleuræ almost without granulation; fore-border finely denticulated; AEP wide and deep, reaching lateral angles; MM-pleuræ with sparse granuation, only at periphery.

Legs: Fore-femora inflated, short (♂, 26:14; ♀, 28:15); disk with very fine granulation; UBF very finely crenelated.

Coloration: ♂, ochre-yellow with chestnut brown and black; ♀, buff and reddish-brown with touch of roseate; anterior angles and lateral notch of pronotum whitish.

Patria: U. S. A. (SW States).

Examined specimens: 1 ♂ and 1 ♀, U. S. A., Arizona (*C. F. Backer*) identified by Dr. R. I. Sailer, from the collection of the author.

67. PHYMATA BOLIVIANA Dudich, 1922. Plate 11, figs. 219-222.

Phymata boliviana Dudich, Ann. Mus. Nat. Hung. 19 (1922) 168, fig. 3.

Phymata parva Kormilev (nec Handlirsch), An. Soc. Cient. Arg. 152 (1951) 176.

With rather developed sexual dimorphism. Dudich has described only the male, further below is described also the female.

Male.—Head longer than wide across eyes (♂, 20:18; ♀, 19:18); frontal processes short and blunt, slightly projecting beyond tip of first antennal joint; ocellar processes dentiform, granulated, inclined forwards; proportions of antennal joints are: ♂, 5:8:11:19; ♀, 5:8:11:15.

Pronotum less long than wide (♂, 32:48; ♀, 35:52); strongly declivous anteriorly (about 45°); fore-border deeply sinuated; anterior angles dentiform, protruding and somewhat divergent; ALA-borders slightly convex, crenelated; lateral notch wide and very shallow, rounded; ALP-borders slightly convex, lateral angles slightly raised, forming an obtuse angle with blunt tip; PLA-borders short and straight; posterior angles very small, angulated; PLP-borders long and slightly convex; fore disk with fine granulation, anteriorly in the middle with smooth, inverted triangle; hind disk smooth, without punctation and almost without granulation, carinæ divergent backwards, granulated anteriorly, somewhat obliterated in the middle.

Scutellum short (♂, 13:17; ♀, 14:19); carina cruciform, longitudinal ridge high, stout, and almost without granulation.

Hemelytra with sparse granulation anteriorly and posteriorly.

Abdomen longer than wide (♂), or less long than wide (♀) (♂, 64:56; ♀, 70:73); ♂, AL- and PL-border straight, lateral angles forming an obtuse angle (about 135°), but with sharply marked tip; ♀, AL- and PL-borders slightly convex, lateral angles rounded, generally the lateral borders of the abdomen in the females are "bombé."

Pleuræ: Propleuræ with whitish, dispersed granulation; fore-border finely denticulated; AEP reaching lateral angles; MM-pleuræ finely granulated.

Legs: Fore-femora inflated (♂, 25:14; ♀, 26:14); disk opaque and more scabrous than granulated; UBF very finely crenelated.

Coloration: ♂, buff; antennal excavation of head and collum black; anterior angles and lateral notch of pronotum whitish; hemelytra and median and hind-femora roseate; transversal band of abdomen walnut-brown; venter bright yellow; ♀, pronotum yellow; transversal band of abdomen buff; other as in male.

Total length: ♂, 7.9; ♀, 8.3 mm; width of pronotum: ♂, 3.0; ♀, 3.1 mm; width of abdomen: ♂, 3.2; ♀, 4.3 mm.

Patria: Bolivia.

Type : ♂, Bolivia, Mapirí; deposited in the Hungarian National Museum, Budapest.

Designated allotype.—♀, Bolivia, Sur-Yungas, Chulumani (*Rev. Dr. A. Bridarolli, S. J.*); deposited in the San Miguel Institute of National Science, Buenos Aires Province.

Examined specimens: Besides the holo- and allotype, 1 ♂, collected with the allotype, slightly smaller and darker than the holotype, in the same Institute of Natural Sciences; 1 ♀, Bolivia, Yungas, Coroico (*A. Martinez*) the shape of the body as in the allotype, but the coloration more similar to *Phymata cinnamomea* Handlirsch, from the collection of the author.

68. PHYMATA SALICIS Cockerell, 1900. Plate 11, figs. 223-226.

Phymata erosa ssp. *salicis* COCKERELL, Entom. 33 (1900) 66.
Phymata salicis EVANS, Ann. Ent. Soc. Am. 24 (1931) 723.

Male.—Head longer than wide across the eyes (♂, 20:17; ♀, 23:19); frontal processes stout, directed forwards, deeply cut out; ocellar processes low, tuberculiform, granulated; proportions of antennal joints are: ♂, 5:7:9:12; ♀, 6:9:10:12.

Pronotum less long than wide (♂, 32:43; ♀, 40:52); fore-border widely cut out; anterior angles angular, slightly acute, directed forwards; ALA-borders convex, rounded, crenelated; lateral notch wide and shallow; ALP-borders slightly convex, rounded, crenelated; lateral angles slightly raised but not drawn out, forming an almost right (♂), or slightly obtuse (♀) angle, apically blunt; PLA-borders short and straight; posterior angles not protruding, blunt or rounded; fore disk with sparse granulation; hind disk laterally with sparse granulation; carinæ divergent backwards, well marked, granulated anteriorly, slightly inflated on top, forming a small ridge.

Scutelum less long than wide (♂, 15:18; ♀, 13:19); median carina subcruciform, stout and granulated.

Hemelytra apically with sparse granulation; membrane brownish.

Abdomen longer than wide (♂, 59:55; ♀, 70:65); AL-borders straight; PE-angles scarcely protruding, angulated; lateral angles forming an obtuse (♂), or almost rounded (♀) angle; connexiva granulated; PL-borders convex in both sexes.

Pleuræ: Propleuræ granulated; fore-border finely denticulated; AEP wide and deep, reaching lateral angles; MM-pleuræ granulated.

Legs: Fore-femora inflated (♂, 22:12; ♀, 27:15); disk with obliterated granulation; UBF finely crenelated.

Coloration: Pale yellow; head on dorsal surface, fourth antennal joints, fore disk and lateral angles of pronotum, transversal band, and lateral angles of abdomen on ventral surface, buff or with touch of roseate; females paler, only frontal processes and lateral angles of pronota, buff; all other part pale yellow.

Total length: ♂, 7.6; ♀, 8.7 mm; width of pronotum: ♂, 2.6; ♀, 3.1 mm; width of abdomen: ♂, 3.3; ♀, 4.0 mm.

Patria: U. S. A. (California, Arizona).

Examined specimens: 2 ♂ and 2 ♀, U. S. A., California (Imperial, El Centro), and Arizona, identified by Dr. R. I. Sailer, from the collection of the author.

69. PHYMATA DEBILIS Handlirsch, 1897. Plate 11, figs. 227–230.

Phymata erosa ssp. *debilis* HANDLIRSCH, Ann. Naturh. Hofmus., Wein 12 (1897) 172.

Handlirsch has compared this species with *P. praestans* Handlirsch, and considered both as subspecies of *P. erosa* (L.). Neither *P. debilis* nor *P. praestans* is allied to *P. erosa* (L.); *P. debilis* is somewhat allied to *P. salicis* Cockerell, and *P. praestans* to *P. bergi* Kormilev and *P. chilensis* Handlirsch.

Male.—Head longer than wide across eyes (♂, 17:15.5; ♀, 19:16); frontal processes short, stout and blunt; ocellar processes low and blunt, scarcely protruding above dorsal plate; proportions of antennal joints are: ♂, 4.5:8:8:12; ♀, 5:8:10:11.

Pronotum less long than wide (♂, 30:41; ♀, 33:45); foreborder widely cut out; anterior angles angulated, slightly acute, directed forwards; ALA-borders straight or scarcely convex, crenelated; lateral notch wide and shallow, but distinctly marked; ALP-borders convex, rounded, crenelated; lateral angles more raised than in *P. Salicis,* but not drawn out, forming a slightly acute (♀), or right (♀) angle, blunt apically; PLA-borders slightly sinuated (♂), or straight (♀); posterior angles not protruding, forming an obtuse angle, sometimes rounded; fore disk laterally with fine, or very fine, granulation; hind disk with sparse granulation; carinæ divergent backwards, slightly raised anteriorly and granulated, smooth and shiny, in midle low.

Scutellum less long than wide (♂, 11:14; ♀, 13:17); median carina wide, low, granulated, cruciform.

Hemelytra practically without granulation.

Abdomen in both sexes longer than wide (♂, 48;46; ♀, 62:60); AL-borders at the base scarcely sinuated then scarcely convex; PE-angles angulated, scarcely protruding; lateral angles almost rounded in both sexes; PL-borders straight (♂), or slightly convex (♀); connexiva with rough granulation.

Pleuræ: Propleuræ granulated; fore-border denticulated inferiorly; AEP wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora short, inflated (♂, 19:11; ♀, 21:12); disk with very fine granulation; UBF crenelated.

Coloration: ♂, yellow, fourth antennal joints, head on dorsal surface, lateral bands and lateral angles of pronotum, hind disk of the same anteriorly, hemelytra, and transversal band of abdomen, brown with touch of roseate, sometimes roseate; ♀, paler, yellow, only lateral angles of pronotum sometimes roseate.

Total length: ♂, 6.2; ♀, 7.3 mm; width of pronotum: ♂, 2.4; ♀, 2.8 mm; width of abdomen: ♂, 2.8; ♀, 3.5 mm.

Patria: Brazil (S. Catarina), Argentina (Misiones).

Examined specimens: Various males and females from Brazil, S. Catarina, Nova Teutonia (*F. Plaumann*); 1 ♂, Argentina, Misiones, Loreto,—Ogloblin coll. The latter from the Institute of Zoology, Academy of Science, U. S. S. R.

70. **PHYMATA BOGOTANA** Handlirsch, 1897. Plate 11, figs. 231-234.

Phymata erosa ssp. *bogotana* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 169.

Phymata bogotana MELIN, Ark. Zool. (2) 22 (1930) 20.

Male.—Elongated, pronotum strongly declivous anteriorly.

Head short (♂, 21:20; ♀, 22:21); frontal processes short, blunt; ocellar processes small, blunt, granulated; proportions of antennal joints are: ♂, 6:9:10:18; ♀, 6:10:12:17.

Pronotum less long than wide (♂, 46:55; ♀, 42:66); fore-border deeply sinuated; anterior angles dentiform, directed forwards; ALA-borders slightly convex, rounded, crenelated; lateral notch small, shallow, angulated; ALP-borders slightly convex, rounded, crenelated; lateral angles raised, more in male, but not drawn out, forming an almost right (♂), or obtuse (♀), angle; PLA-borders short, slightly sinuated (♂), or straight (♀); fore disk granulated at periphery; hind disk deeply punctated, but with sparse granulation; carinæ very low and shiny, at base parallel and granulated; then divergent and without granulation.

Scutellum less long than wide (♂, 16:25; ♀, 16:25); median carina subcruciform, wide and low granulated.

Hemelytra with very fine and sparse granulation; membrane brown.

Abdomen in both sexes longer than wide (♂, 70:62; ♀, 90:83); AL-borders straight (♂), or convex (♀); PE-angles protruding as small, acute angles, directed slightly backwards; lateral angles forming an obtuse angle (♂), or almost rounded (♀); PL-borders slightly sinuated (♂), or slightly convex (♀).

Pleuræ: Propleuræ finely granulated; fore-border denticulated inferiorly.

Legs: Fore-femora longer than wide (♂, 27:14; ♀, 30:15); disk granulated; UBF finely crenelated.

Coloration: ♂, buff or pale testaceous; fourth antennal joints in the middle, antennal excavation of head, occiput, transversal band of abdomen, and mesosternum, black; anterior angles and lateral notch of pronotum whitish; connexivum, venter, and MM-pleuræ, pale yellow; propleuræ, forelegs, lateral angles of abdomen on ventral surface, and hemelytra, reddish-brown to testaceous; ♀, paler, pale yellow; lateral bands of pronotum, base of corium, and lateral angles of abdomen on ventral surface, ocraceous; transversal band of hemelytra, pale roseate; tip of corium, roseate.

Total length: ♂, 8.6; ♀, 10.0 mm; width of pronotum: ♂, 3.3; ♀, 4.2 mm; width of abdomen: ♂, 3.7; ♀, 5.0 mm.

Patria: Colombia.

Designated lectotypes.—♂, (Colombia), Bogotá (*Lindig*); the cotype of Handlirsch; deposited in the Natural History Museum, Vienna.

Designated allolectotype.—♀, collected with the lectotype, the cotype of Handlirsch, deposited in the same museum.

Examined specimens: Besides the holo- and allolectotypes, 1 ♂, Colombia, Bogotá, identified by Signoret as *P. pectoralis* (nomen nudum?), and by Handlirsch as *P. bogotana* (cotype), from the Natural History Museum, Vienna; 4 ♂ and 2 ♀, Colombia, Bogotá (*Lindig*) (cotypes of Handlirsch), and 1 ♂, Venezuela, Merida, all from Natural History Museum, Stockholm.

71. PHYMATA PACIFICA Evans, 1931. Plate 11, figs. 235-238.

Phymata pacifica EVANS, Ann. Ent. Soc. Am. 24 (1931) 725.

Evans compared this species with *Phymata severini* Handlirsch, but with which it is not allied, having an elongated abdomen.

PHYMATA PACIFICA PACIFICA, 1931.

Phymata pacifica Evans, Ann. Ent. Soc. Am. 24 (1931) 725.

Male.—Head as long, or almost as long as wide across eyes (♂, 18:18; ♀, 19:18); frontal processes short, blunt, divergent, notched anteriorly, scarcely projecting beyond tip of first antennal joint, coellar processes small, dentiform, granulated; proportions of antennal joints are: ♂, 5:7:9:14; ♀, 6:9:11:12.

Pronotum less long than wide (♂, 33:47; ♀, 39:54); fore-border widely cut out; anterior angles short, blunt or rectangular; ALA-borders slightly convex, rounded posteriorly, finely crenelated; lateral notch wide and shallow; ALP-borders convex, rounded; lateral angles raised, and somewhat drawn out, sometimes terminated with a small tooth, forming a slightly obtuse angle; PLA-borders short and sinuated; posterior angles small, angulated, directed out and backwards; PLP-borders twice as long as PLA-borders; fore disk granulated with almost spiculoid granulæ; hind disk laterally with sparse granulation; carinæ high, divergent backwards, granulated anteriorly, slightly inflated on top.

Scutellum less long than wide (♂, 11:16; ♀, 12:20); median carina cruciform, low, granulated.

Hemelytra practically without granulation, membrane brown.

Abdomen longer than wide (♂), or as long as wide (♀); AL-borders slightly sinuated, then scarcely convex (♂), or slightly convex (♀); PE-angles angulated, scarcely protruding; lateral angles forming an obtuse angle; PL-borders straight (♂), or convex (♀); venter without granulation.

Pleuræ: Propleuræ granulated; fore-border denticulated inferiorly; AEP wide and short, reaching to lateral notch; MM-pleuræ granulated.

Legs: Fore-femora short (♂, 23:13; ♀, 27:15); disk along the upper border granulated; UBF finely crenelated.

Coloration: In both sexes pale yellow, with buff and yellow-brown; transversal band of hemelytra roseate.

Total length: ♂, 7.0; ♀, 8.2 mm; width of pronotum: ♂, 2.9; ♀, 3.1 mm; width of abdomen: ♂, 3.1; ♀, 4.0.

Patria: U. S. A. (California).

Examined specimens: 1 ♂ and 1 ♀, U. S. A., California, San Diego Co (*C. C. Searl*), identified by Mr. J. C. Lutz, Philadelphia, from the collection of the author.

PHYMATA PACIFICA STANFORDI Evans, 1931. Plate 11, figs. 239-240.

Phymata pacifica stanfordi EVANS, Ann. Ent. Soc. Am. 24 (1931) 726.

Male.—Similar to the typical form, but differs from it by: bigger size, frontal processes longer and slightly raised; ocellar processes longer and more dentiform; granulation of head more spiculoid; anterior angles more protruding, acute; lateral notch deeper, angulated; ALA-borders roughly crenelated; lateral angles of pronotum in both sexes, though forming an obtuse angle, on tip more acute; AL-borders slightly sinuated in male, or slightly convex in female; lateral angles of abdomen in both sexes forming an obtuse angle, but sharply marked; granulation of body stronger, particularly on connexivum and venter.

Coloration: Ochre-yellow with buff; transversal band of abdomen yellow-brown; transversal band of hemelytra ochre-yellow, tip of corium roseate. The proportions of the antennal joints are: ♂, 6:9:10:16; ♀, 6:9:10:15.

Total length: ♂, 8.2; ♀, 10.0 mm; width of pronotum: ♂, 3.0; ♀, 3.6 mm; width of abdomen: ♂, 3.9; ♀, 5.0 mm.

Patria: U. S. A. (California).

Examined specimens: 1 ♂ and 1 ♀, U. S. A., California, Santa Clara Co. (*Coquillet*), identified by Dr. Reece I. Sailer, from the collection of the author.

PHYMATA PACIFICA HAINESI ssp. nov. Plate 11, figs. 241-243.

Male.—In general, similar to *P. pacifica* Evans, more or less of the same size; coloration of male darker, pale-yellow with buff, dark brown and black, transversal band of hemelytra violaceous, membrane brown; female pale yellow with buff, transversal band of hemelytra roseate, the same of abdomen ochre-yellow.

Head and pronotum similar to the typical form, but the lateral angles are more raised forming an acute (♂), or almost right (♀) angle, with the tip more acute; abdomen less long than wide; AL-borders sinuated (♂), or almost straight (♀); lateral angles forming an obtuse angle in both sexes; PL-borders scarcely sinuated (♂), or scarcely convex (♀); connexivum more granulated than in typical form, but less than in *stanfordi*, venter without granulation.

Biometrical measures; head, ♂, 18:18; ♀, 19:19; pronotum, ♂, 33:48; ♀, 36:53; scutellum, ♂, 11:15; ♀, 12:18; abdomen,

♂, 60:62; ♀, 58:68; fore-femora, ♂, 22:11; ♀, 26:14; proportions of antennal joints are: ♂, 5:9:9:14; ♀, 5:8:9:13.

Total length: ♂, 7.3; ♀, 8.0 mm; width of pronotum, ♂, 3.0; ♀, 3.3 mm; width of abdomen, ♂, 3.9; ♀, 4.1 mm.

Patria: Mexico (Baja California).

Holotype.—♂, Mexico, Lower California, Calamujuet, 1889 (*Chas D. Haines*), deposited in the U. S. National Museum, Washington.

Allotype.—♀, collected with the holotype; in the same museum.

This subspecies is dedicated to the collector, Chas. D. Haines.

72. PHYMATA PARVA Handlirsch, 1897. Plate 11, figs. 244–246.

Phymata erosa ssp. *parva* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 165.

Handlirsch himself could not explain why it is *prava*. He says: "Unter den Namen *parva* m. vereinige ich ungefähr 100 Exemplare aus verchiedenen Theilen Centralamerikas und nordlicen Südamerika. Ich glaube selbst nicht, dass man hier von einer einheitlichen Subspecies reden kann, denn ein Theil meiner Exemplare nähert sich mehr der Subspecies *Severini* m., ein anderer Theil mehr der carneipes Mayr, *parviceps* m., *cinnamomea* m. und *bogotana* m. Es ist mir aber vorläufig ganz un möglich, Grenzen aufzufinden. . ." A rather curious way to describe a subspecies: The single way out of this confusion was to fix the lectotype, and to give its description. Through the good offices of Dr. Max Beier, of the Natural History Museum in Vienna, I have received 12 cotypes of *P. parva*, of which I have selected 1 ♂ and 1 ♀ as the lectotype and allolectotype, respectively. All other specimens, which Handlirsch so generously considered as *parva*, and which, it is true, are very badly limited from each other I have separated in various species and subspecies, but it is always possible, that having more abundant materials of the same, some further corrections will be needed. *Phymata andina* Melin, *P. colombiana* sp. nov., *P. barberi* sp. nov., *P. minuta* sp nov., *P. cinnamomea minor* ssp. nov. and *P. inconspicua* sp. nov., probably have formed *Phymata parva* sensu Handlirsch.

Male.—Head longer than wide across eyes (♂, 18:17; ♀, 20:18); frontal processes blunt, notched anteriorly, directed forwards, slightly projecting beyond tip of first antennal joint; ocellar processes small, blunt, granulated; proportions of antennal joints: ♂, 4:8:10:13; ♀, 4:9:11:11.

Pronotum less long than wide (♂, 30:47; ♀, 35:53) declivous anteriorly (about 45°); fore-border deeply sinuated; anterior angles strong, angular, directed forwards; ALA-borders strongly convex, rounded or subangulated, crenelated; lateral notch deep, rectangular; ALP-borders very convex, rounded and crenelated; lateral angles raised, rounded or almost rounded; PLA-straight; posterior angles small, directed sideways; fore disk granulated laterally and along hind border; hind disk almost without granulation; carinæ parallel and granulated anteriorly, then divergent, shiny, and without granulation.

Scutellum less long than wide (♂, 11:18; ♀, 11:19); median carina cruciform, somewhat obliterated, with sparse granulation.

Hemelytra with sparse granulation; membrane yellow-brown.

Abdomen less long than wide (♂, 58:61; ♀, 65:68); ♂, AL-borders sinuated, from the fourth connexivum convex; lateral angles forming an obtuse angle; PL-borders almost straight; ♀, AL-borders almost straight, from fourth connexivum convex; lateral angles forming a very obtuse angle, almost rounded; PL-borders convex; PE-angles protruding as acute angles; connexiva almost without granulation.

Pleuræ: Propleuræ roughly granulated; fore-border denticulated; AEP wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora inflated (♂, 22:11; ♀, 25:13); disk more or less granulated; UBF crenelated.

Coloration: Rather variable; ♂, generally dark; head, pronotum, and scutellum brown, chestnut brown or piceous; anterior angles and lateral notch of pronotum ivory; hemelytra at base and apically brown with touch of violaceous; transversal band of same violaceous; connexiva yellow, with more or less big, round, black spots on the third and sixth connexiva (1 + 1), lateral sometimes absent; the transversal band of the abdomen black; ♀ paler, buff, hemelytra with touch of roseate; transversal band of abdomen testaceous, lateral angles of the same, on ventral surface, also testaceous.

Total length: ♂, 7.1; ♀, 8.1 mm; width of pronotum: ♂, 2.9; ♀, 3.2 mm; width of abdomen: ♂, 3.9; ♀, 4.3 mm.

Patria: Mexico, Guatemala, Costa Rica.

Designated lectotype.—♂, Mexico, Morelia, 1892 (*A. de Borre*) the cotype of Handlirsch; deposited in the Natural History Museum, Vienna.

Designated allolectotype.—♀, collected with the lectotype; in the same museum.

Examined specimens: Cotypes of Handlirsch: 5 ♂, Mexico; 1 ♂, Mexico, Guanaxua to (M. R. Belg.); 1 ♂, Costa Rica, San Jose, 1,135 m (*P. Biotley*); all from Natural History Museum in Vienna. 1 ♂, Mexico (ex-coll. Uhler); 2 ♀, Mexico, Morelia, Cuernavaca (*N. L. H. Krauss*) (on *Eupatorium adenophorum*); 1 ♂, Guatemala, Antiqua (*E. G. Smyth*), all from U. S. National Museum, Washington.

73. PHYMATA CARIOCA Kormilev, 1951. Plate 12, fig. 249.

Phymata carioca KORMILEV, Ann. Soc. Cient. Arg. 152 (1951) 171, fig. 1.

Male.—Head longer than wide across eyes (30:28); frontal processes slightly raised, projecting beyond tip of first antennal joint; ocellar processes strong, granulated; proportions of antennal joints second to fourth are: 6:7:14.

Pronotum less long than wide (30:42); fore-border deeply cut out; anterior angles strong, acute, directed forwards; ALA-borders slightly sinuated anteriorly, then strongly convex, rounded; lateral notch deep, angulated; ALP-borders convex, rounded; lateral angles forming obtuse angle; PLA-borders long, sinuated; posterior angles very strong, dentiform, directed out and backwards, maximal width of pronotum; carinæ divergent backwards, raised and granulated anteriorly, then without granulation; ALA-, ALP-, and PLA-borders crenelated.

Scutellum less long than wide; median carina cruciform, granulated.

Abdomen less long than wide; AL- and PL-borders sinuated and crenelated; PE-angles protruding, dentiform; lateral angles forming an acute angle.

Legs: Fore-femora longer than wide; disk fine granulation; UBF crenelated.

Coloration: Yellow to ochre-yellow; anterior angles and lateral notch of pronotum, and transversal band of hemelytra, whitish; transversal band of abdomen pale-testaceous.

Male.—Total length, 7.4 mm; width of pronotum, 3.2 mm; width of abdomen, 4.1 mm.

Patria: Brazil (Minas Gerais).

Type: ♂, Brazil, Minas Gerais, Indio de Brasil; deposited in the Instituto Oswaldo Cruz, Rio de Janeiro.

74. PHYMATA CONSPICUA Scott, 1870. **Plate 12, figs. 250–252.**

Phymata conspicua Scott, Stett. Ent. Zeit. 31 (1870) 102.
Syrtis conspicua Stål, Enum. Hem. 5 (1876) 136.
Phymata erosa ssp. *parviceps* Handlirsch, Ann. Naturh. Hofmus., Wien 12 (1897) 166.
Phymata conspicua Handlirsch, idem. 12 (1897) 180.

The following description is compiled from the original description of Scott (♂), the photo of the type, and from examined female.

Male.—Head short, as long as wide across eyes; frontal processes short, more or less notched anteriorly; proportions of antennal joints are: ♀, 6:9:9:16 (they lack, it seems, the type of Scott).

Pronotum less long than wide; fore-border widely cut out; anterior angles rectangular, directed forwards; ALA-borders slightly convex, crenelated; lateral notch wide and shallow, sometimes scarcely marked; ALP-borders moderately convex, rounded; lateral and posterior angles low and approximated to each other; PLA-borders very short slightly sinuated or almost straight; PLP-borders twice as long as PLA-borders; fore disk roughly granulated; hind disk also with dispersed pale granulation on darker background; carinæ divergent backwards, in the middle slightly curved and approximated to each other; granulation of body very rough, paler than background, and conspicuous.

Scutellum less long than wide; median carina cruciform, high and granulated, the disk also with a few granulæ.

Hemelytra with dispersed, sparse granulation; membrane yellow-brown.

Abdomen less long than wide (♂, 27:36), almost rhomboid; AL-borders firstly sinuated, then convex in continuous line; lateral angles forming a slightly obtuse angle; PE-angles scarcely protruding; Pe4 forming an acute angle with blunt tip; PL-borders almost straight, slightly concave; in female AL-borders almost straight; lateral angles more obtuse, and PL-borders slightly convex; venter granulated. Pleuræ also granulated.

Coloration: Pale yellow-brown (hell pechfarbe)with brown; granulation whitish; transversal band of abdomen black. ♀, pale yellow to yellow; granulation whitish; membrane yellow-brown.

Total length: ♂, 6.9; ♀, 8.2 mm; width of pronotum: ♂, 2.75; ♀, 3.0 mm; width of abdomen: ♂, 4.0; ♀, 4.7 mm.

Patria: Central America and probably northern part of South America.

Type: ♂, *patria ignota,* deposited in the British Museum (N. H.), London.

Examined specimen: ♀, Costa Rica, Turrialba (*Schild-Burgdorf*), identified as *P. parviceps* Handlirsch, from U. S. National Museum, Washington.

75. **PHYMATA COLOMBIANA** sp. nov. Plate 12, figs. 253–255.

Female.—Head longer than wide across eyes (22:19); frontal processes very short and fused together into a plate, rounded and scarcely notched anteriorly, shorter than the tip of the first antennal joint; ocellar processes very small, dentiform, situated in the antennal excavation below its upper border, not protruding above the upper level of head; proportions of antennal joints (first to second, two apical are lacking) are: 5:9:–:–.

Pronotum less long than wide (39:61), moderately declivous anteriorly; fore-border widely sinuated; anterior angles rectangular, slightly protruding forwards; ALA-borders straight anteriorly, then slightly convex rounded; lateral notch small, wide and shallow; ALP-borders slightly convex, lateral angles not developed, marked only by the change of the level, seen from behind do not raise above hind disk of pronotum; PLA-borders very short, and situated in the prolongation of ALP-borders; posterior angles well developed, angular, directed sideways, maximal width of pronotum; PLP-borders long, and sinuated posteriorly; fore disk without granulation, but scabrous, only with sparse granulation at lateral and posterior borders; hind disk with very fine punctation laterally and posteriorly, anteriorly, between carinæ, completely smooth; carinæ low, shiny, at base parallel, then divergent, granulated anteriorly.

Scutellum less long than wide (11:18); median carina high, subcruciform, finely granulated, particularly on lateral branches.

Hemelytra with very fine, dispersed, whitish granulation; membrane hyaline.

Abdomen relatively big, less long than wide (75:103); AL-borders at base sinuated, then convex; PE-angles scarcely protruding, angulated; Pe4 slightly protruding; lateral angles forming an obtuse angle; PL-borders slightly convex; connexivum before transversal band granulated only on exterior border, back of the same also on discs.

Pleuræ: Propleuræ with very fine, whitish granulation; fore-border finely denticulated; AEP reaching lateral notch; MM-pleuræ with very fine, whitish granulation.

Legs: Fore-femora short, inflated (29:15); disk without granulation; UBF crenelated.

Coloration: Almost uniform, yellow-brown; hind disk of pronotum between carinæ, hemelytra anteriorly and posteriorly, and transversal band of abdomen, somewhat darker; venter and median and hind femora with fine, reddish punctation. Body has an aspect as made of china.

Female.—Total length, 9.0 mm; width of pronotum, 3.5 mm; width of abdomen, 6.1 mm.

Patria: Colombia.

Holotype.—♀, Colombia, Noule Redondo, 1,600 m, April 17, 1947 (*Richter*); deposited in the collection of the author.

76. PHYMATA HAYWARDI Kormilev, 1950. Plate 12, figs. 256-259.

Phymata haywardi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 585.
Phymata haywardi KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 64.

Male.—Head less long than wide across eyes (♂, 18:19; ♀, 20:21); frontal processes short, blunt, scarcely notched anteriorly, not reaching tip of first antennal joint; ocellar processes low, tuberculiform; proportions of antennal joints are: ♂, 5:7:10:15; ♀, 5:11:11:16.

Pronotum less long than wide (♂, 36:50; ♀, 47:65); fore-border widely cut out; anterior angles angulated, acute or rectangular, directed forwards; ALA-borders at base sinuated, then convex, rounded; lateral notch wide and shallow, rounded; ALP-borders convex, rounded; lateral angles slightly raised forming an acute (♂), or right (♀) angle, directed slightly backwards; PLA-borders very short, sinuated; posterior angles approached to lateral angles, angulated, directed out and backwards; PLP-borders long and sinuated; fore disk scabrous and with fine ivory punctation; hind disk punctated, but almost without granulation; carinæ high anteriorly, parallel, granulated, convergent in the middle, low and shiny, strongly divergent posteriorly.

Scutellum less long than wide (♂, 11:18; ♀, 15:22); median carina subcruciform, the median ridge of the same stout, high, shiny, and with indistinct granulation, lateral branches lower, with sparse granulation.

Hemelytra with fine, disperse, whitish granulation; membrane hyaline.

Abdomen less long than wide (♂, 58:67; ♀, 73:94); ♂, AL-borders at base sinuated, then convex; PE-angles scarcely protruding; angulated; Pe4 slightly more protruding; lateral angles forming an obtuse angle, with rounded tip; PL-borders straight. ♀, AL- and PL-borders convex; lateral angles forming an obtuse angle with round tip. Connexivum in both sexes shiny, without granulation.

Pleuræ: Propleuræ with obliterated granulation, which is dense only at the borders; fore-border finely denticulated inferiorly; AEP reaching lateral notch; MM-pleuræ more or less granulated.

Legs: Fore-femora short, inflated (♂, 25: 14; ♀, 29: 17); disk with fine, concolor granulation; UBF finely crenelated.

Coloration: In both sexes almost identical, yellow-brown, partially darker; transversal band of abdomen, pleuræ, and lateral angles of abdomen on ventral surface darker, brown to dark walnut-brown, in female transversal band of abdomen light walnut-brown.

Total length: ♂, 7.4; ♀, 9.0 mm; width of pronotum: ♂, 3.1; ♀, 4.0 mm; width of abdomen: ♂, 4.0; ♀, 5.6 mm.

Patria: Argentina (Misiones), Brazil (Mato Grosso).

Type: ♂, Argentina, Misiones, Iguazú, March, 1945 (*Dr. K. J. Hayward, Dr. A. Willink,* and *R. Golbach*). Deposited in the Instituto Lillo, Tucumán, Argentina.

77. PHYMATA INCONSPICUA sp. nov. Plate 12, figs. 200 and 201.

Male.—In general similar to *P. conspicua* Scott, but fourth antennal joint relatively much shorter, distinctly shorter than second and third together (16:20), ALA- and ALP-borders more convex, and lateral notch deeper; lateral angles raised and produced in acute teeth; posterior angles more protruding; AL-borders of abdomen at base deeply sinuated and from fourth connexivum more convex; lateral angles of abdomen forming an almost right angle; granulation on pronotum, scutellum, hemelytra, connexivum and venter inconspicuous, concolor with the background, and much more finer, than in *P. conspicua* Scott, only on pleuræ paler, and more conspicuous.

Biometrical measures: head, 19:19; pronotum, 38:54; scutellum, 11:16; abdomen, 60:78; fore-femora, 25:15; proportions of antennal joints are: ♂, 6:9:11:16.

Coloration: Brown to piceous; anterior angles and lateral notch of pronotum whitish; hemelytra piceous, with transversal band brown; venter and median and hind legs yellow; transversal band of abdomen black; lateral angles of venter brown.

Male.—Total length, 7.5 mm; width of pronotum, 3.3 mm; width of abdomen, 4.8 mm.

Patria: Venezuela.

Holotype.—♂, Venezuela, Paramaribo; deposited in the collection of Dr. P. Wygodzinsky, Tucumán, Argentina.

78. PHYMATA MINUTA sp. nov. Plate 12, figs. 262–264.

Male.—Similar to *P. barberi* sp. nov., but smaller and opaque; frontal processes longer and more deeply notched, distinctly project beyond tip of first antennal joint; fourth antennal joint as long as second and third together.

Head longer than wide across eyes (15:14); ocellar processes blunt and divergent; proportions of antennal joints are: 5:7: 8:15.

Pronotum less long than wide (25:37); fore-border widely cut out; anterior angles short, rounded, granulated; ALA-borders straight, crenelated posteriorly abruptly subangulated, forming a somewhat obtuse angle; lateral notch short and deep, angulated; ALP-borders convex, subangulated, forming an obtuse angle (about 150°); lateral angles raised, and slightly inclined sideways, forming an obtuse angle (about 100°); PLA-borders slightly sinuated; posterior angles subrectangular, scarcely protruding sideways; PLP-borders straight; for disk granulated; hind disk with dispersed whitish granulation; carinæ divergent backwards, at base more, then less granulated.

Scutellum short (18:11); median carina subcruciform, granulated.

Hemelytra at base and with dispersed granulation posteriorly; membrane brownish.

Abdomen less long than wide (42:45); AL-borders slightly sinuated, from fourth connexivum scarcely convex; PE-angles slightly protruding; lateral angles forming a slightly acute angle, with blunt tip; PL-borders slightly sinuated.

Pleuræ: Propleuræ granulated; fore-border finely denticulated; AEP-reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora short, inflated (17:9); disk finely granulated; UBF very finely crenelated.

Coloration: Ivory and buff; tip of corium ochre-brown; lateral bands of pronotum and transversal of abdomen testaceous.

Male.—Total length, 5.4 mm; width of pronotum, 2.2 mm; width of abdomen 2.7 mm.

Patria: Honduras.

Holotype.—♂, Honduras, Monte Cristo, 1918 (*W. M. Mann*); deposited in the U. S. National Museum, Washington.

79. PHYMATA CINNAMOMEA Handlirsch, 1897. Plate 12, figs. 265-268.

Phymata erosa ssp. *cinnamomea* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 168.

Phymata orfilai KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 584.

Phymata orfilai KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 64, fig. 57.

Phymata orfilai KORMILEV, An. Soc. Cien. Arg. 152 (1951) 171 (note).

Handlirsch gives no drawings of this species, and his description is insufficient. If I could only examine his cotypes, I could establish that *P. orfilai* is identical with *P. cinnamomea.*

Male.—Head short, as long as wide across eyes (♂, 18:18; ♀, 19:19); frontal processes small, short, slightly notched anteriorly, not reaching tip of first antennal joint; ocellar processes dentiform, divergent; proportions of antennal joint are: ♂, 5:9:11:17; ♀, 5:8:10:15.

Pronotum strongly declivous anteriorly (45°), less long than wide (♂, 36:47; ♀, 39:54); fore-border slightly sinuated; anterior angles blunt, not protruding; ALA-borders straight, abruptly rounded posteriorly, almost angulated; lateral notch short and deep, subangulated; ALP-borders convex, rounded; lateral angles raised forming an obtuse, but sharply marked, angle; PLA-borders long and straight; posterior angles small, angulated; PLP-borders long and straight; fore disk granulated only at periphery; hind disk laterally with sparse granulation; carinæ divergent backwards, granulated anteriorly.

Scutellum short (♂, 11:17; ♀, 13.20); median carina cruciform, high and well marked, with sparse granulation.

Hemelytra with fine and sparse granulation; membrane brown.

Abdomen ♂, AL-borders at base deeply sinuated, from fourth connexivum much dilated; PE- angles scarcely protruding; Pe4 more protruding; lateral angles forming an acute angle, its borders convex, rounded; PL-borders sinuated; posterior border subtruncated; ♀, AL-borders slightly sinuated; PL-borders straight; lateral angles forming an almost rectangular angle, its borders slightly convex, rounded.

Pleuræ: Propleuræ finely granulated; fore-border finely denticulated; AEP reaching lateral notch; MM-pleuræ finely granulated.

Legs: Fore-femora short, inflated (♂, 24:13; ♀, 25:14); disk finely granulated; UBF finely crenelated.

Coloration sharply delimited, particularly on pronotum; ivory and cinnamon-brown to sepia; ivory are: head, transversal band of hemelytra, connexiva before and back of transversal band; propleuræ on fore half, acetabulæ, legs and venter, with exception of lateral angles; the rest of body cinnamon-brown, partially sepia; sometimes males have head slightly darker, buff.

Total length: ♂, 7.1; ♀, 8.1 mm; width of pronotum: ♂, 3.0; ♀, 3.2 mm; width of abdomen: ♂, 3.9; ♀, 5.0 mm.

Patria: Brazil, Argentina, Paraguay, and Bolivia.

Designated lectotype.—♂, Brazil (*Scott*), the cotype of Handlirsch, with label: "*cinnamomea* det. Handlirsch; deposited in the Natural History Museum in Vienna.

Designated allolectotype.—♀, Brazil, Espiritu Santo (*Fruhstoffer*); the cotype of Handlirsch; in the same collection.

Examined specimens: Various specimens from Brazil, Argentina (Misiones and Tucumán), Paraguay, and Bolivia.

80. PHYMATA BARBERI sp. nov. Plate 12, fig. 269 to Plate 13, fig. 275.

In general similar to *P. cinnamomea* Handlirsch, but pronotum anteriorly less declivous, lateral angles of same, seen from behind more vertical, and coloration distinct, never found in *P. cinnamomea*, not so contrasted on pronotum, which is buff, and not ivory, with ochre-brown, not cinnamon-brown.

The typical specimens are from Mexico, but there are some specimens from Costa Rica, Panama, Honduras, and Guatemala, which are somewhat aberrant, slightly smaller (6.2 to 7.3 mm), the coloration is slightly distinct and the lateral angles of the pronotum in the specimen from Honduras are more raised than is normal in *P. barberi*. These specimens are perhaps better placed in the same species until we shall have more material.

Male.—Head as long as wide across eyes (♂, 19:19; ♀, 20:20); frontal processes short, scarcely notched anteriorly, more or less reaching tip of first antennal joint, or slightly projecting beyond it; ocellar processes small, dentiform; the proportions of the antennal joint are: ♂, 5:8:11:17; ♀, 5:9:12:15.

Pronotum less long than wide (♂, 35:48; ♀, 39:55); fore-border slightly sinuated; anterior angles blunt, granulated, and slightly divergent; ALA-borders at the base sinuated, then strongly convex, rounded; lateral notch short, deep, subangulated; ALP-borders convex, rounded; lateral angles raised, more in the male, seen from behind are subvertical or vertical, forming an obtuse angle, more so in female; PLA-borders straight; posterior angles angulated, protruding sideways, but sometimes scarcely marked; fore disk scabrous, and at posterior border granulated laterally, anteriorly with an inverted, smooth triangle; hind disk finely punctated, laterally with a few granulæ; carinæ at base parallel and granulated, then divergent and slightly obliterated.

Scutellum less long than wide (♂, 12:18; ♀, 14:20); median carina cruciform, high, and sparsely granulated.

Hemelytra at base and apically with rather dense granulation, without it in the middle; membrane yellowish, at base with diffused brown spot.

Abdomen less long than wide (♂, 60:72; ♀, 65:91), laterally dilated; AL- and PL-borders deeply sinuated (♂), or almost straight (♀); PE-angles scarcely protruding, angulated; Pe4 more protruding; lateral angles forming a slightly acute (♂), or right (♀) angle, its borders rounded; connexivum with fine granulation, more conspicuous on the transversal band.

Pleuræ: Propleuræ granulated; fore-border denticulated inferiorly; AEP-reaching lateral notch; MM-pleuræ with very fine granulation, at borders with rough granulation.

Legs: Fore-femora short, inflated (♂, 24:14; ♀, 25:15); disk finely granulated; UBF finely crenelated.

Coloration: The head, pronotum, scutellum, and MM-pleuræ, buff; anterior angles and the lateral notch of pronotum slightly paler; fourth antennal joints, lateral bands and lateral angles of pronotum, base of hemelytra, transversal band of abdomen, lateral bands and lateral angles of propleuræ, lateral angles of venter, and forelegs, reddish-brown to chestnut-brown; connexivum before and back of transversal band, tip of scutellum, venter, propleuræ on anterior half, and median and posterior legs, yellow; transversal band of hemelytra roseate, tip of corium brown with a touch of roseate; ♀, paler, head, fore disk of scutellum, and forelegs yellow.

Total length: ♂, 7.4; ♀, 8.6 mm; width of pronotum: ♂, 3.0; ♀, 3.3 mm; width of abdomen: ♂, 4.5; ♀, 5.5 mm.

Patria: Mexico, Costa Rica, Guatemala (?).

Holotype.—♂, Mexico, Tampico, December 15 (*E. A. Schwarz*); deposited in the U. S. National Museum in Washington.

Allotype.—♀, Mexico, ex-collection of C. F. Baker; in the same Museum.

Paratypes.—2 ♂, Mexico, Vera Cruz, ex-collection of P. B. Uhler; 1 ♂, Mexico, Atencingo, June 2, 1922 (*E. G. Smyth*), and 1 ♀, Mexico, ex-collection of C. F. Baker, in the U. S. National Museum, Washington and in the collection of the author; 1 ♀, Costa Rica, San José, 1,135 m (*P. Biolley*), identified by Handlirsch as *P. parva;* deposited in the Natural History Museum in Vienna; 1 ♂, from Guatemala, San José (*F. Knab*) is somewhat aberrant, and therefore was not included between the paratypes.

It is a pleasure to dedicate this species to Mr. H. G. Barber, the eminent North-American hemipterologist.

P. barberi sp. nov. is very allied to *P. cinnamomea* Handlirsch, but differs from it by pronotum less declivous anteriorly, lateral angles of same more vertical, and by different coloration, which never occurs in *P. cinnamomea.*

81. PHYMATA ANDINA Melin, 1930. Plate 12, figs. 276–278.

Phymata andina MELIN, Ark. Zool. (2) 22 (1930) 21, fig. 22.

Male.—Head short, scarcely longer than wide across the eyes (♂, 18:17; ♀, 19:18); frontal processes short, distinctly notched, slightly upturned; ocellar processes granulated with spiculæ; the proportions of the antennal joints are: ♂, 5:8:10:15; ♀, 5:8:11:14.

Pronotum less long than wide (♂, 31:46; ♀, 35:52) strongly declivous anteriorly; fore-border widely cut out; anterior angles granulated, directed sideways; ALA-borders convex, rounded, crenelated; lateral notch wide and rather deep; ALP-borders convex, rounded, crenelated; lateral angles raised, angulated, forming a right or slightly obtuse angle; PLA-borders sinuated (♂), or straight (♀); posterior angles slightly protruding sideways; fore disk with spiculoid granulation, but lying; anteriorly with an inverted smooth triangle; hind disk with sparse granulation; carinæ parallel, granulated anteriorly, then divergent and somewhat obliterated.

Scutellum less long than wide (♂, 11:15; ♀, 13:19); median carina cruciform, granulated.

Hemelytra with fine and sparse granulation; membrane brownish.

Abdomen less long than wide (♂, 52:65; ♀, 65:74); ♂, AL-borders moderately sinuated, from fourth connexivum convex; lateral angles forming a slightly obtuse angle (about 100°); PL-borders straight; PE-angles scarcely protruding, Pe4 slightly protruding; ♀, AL- and PL-borders slightly convex; lateral angles forming an obtuse angle (about 130°).

Pleuræ: Propleuræ with dense granulation; fore-border crenelated, denticulated inferiorly; AEP very wide and deep, reaching lateral notch; MM-pleuræ granulated.

Legs: Fore-femora short, inflated (♂, 23:12; ♀, 26:14); disk granulated; UBF denticulated.

Coloration: Rather variable; ♂, buff; head laterally, anterior border, lateral notch, and anterior angles of pronotum, scutellum, connexivum before, and abdomen back of transversal band, pleuræ, venter, and median and hind legs, yellow to pale yellow; fourth antennal joints and hemelytra brown, transversal band of latter yellowish; transversal band of abdomen piceous to black; lateral bands of propleuræ, and lateral angles of venter buff. ♀, much paler, yellow; head on dorsal surface buff; hemelytra yellow-brown, sometimes roseate.

Total length: ♂, 7.0; ♀, 8.0 mm; width of pronotum: ♂, 2.8; ♀, 3.1 mm; width of abdomen: ♂, 3.9; ♀, 4.7 mm.

Patria: Colombia, Venezuela, Panama (?).

Type: ♂, Colombia, Bogotá (*Lindig*); deposited in the Natural History Museum, Stockholm.

As all paratypes of Melin were males, I have selected an allotype female, from Venezuela, Caracas, Monte Avila (*P. Vogl*); deposited in the collection of the author. This female was collected together with a male which was compared with the type, and found cospecific.

This species is rather variable in color, and the development of the frontal processes and lateral angles of the pronotum, but can be separated from the allied species (*P. carneipes* Mayr and *P. barberi* sp. nov.) by the very protruding eyes, inflated genæ, short but deeply notched frontal processes, lateral angles of the pronotum relatively high and angulated, AL-borders sinuated anteriorly, then convex, by the rough, subspiculoid granulation, and other characters.

82. PHYMATA CARNEIPES Mayr, 1865. Plate 13, figs. 279-282.

Phymata carneipes MAYR, Verh. Zool. Bot. Ges., Wien 15 (1865) 442.

Phymata crosa ssp. *carneipes* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 167.

Phymata romani MELIN, Ark. Zool. (2) 22 (1930) 23.

Phymata carneipes KORMILEV, An. Soc. Cient Arg. 152 (1951) 175.

This species was much confused. Mayr has described it from Brazil, Handlirsch synonymized it with *P. breviceps* Stål, which is bigger, and has the fore-disk of the pronotum provided with erect spiculæ. Melin has not seen the genuine *P. carneipes*, and has accepted the synonymy of Handlirsch, but made an impossible combination, "*Phymata carneipes* Stål" which is *P. breviceps* Stål, and the genuine *P. carneipes* described as *P. romani* Melin.

The genuine *P. carneipes* is distributed principally in Brazil, Rio de Janeiro and Amazonas. In SE-Brazil it makes a subspecies, *subangulata*, described further below; *P. breviceps* Stål is distributed in Colombia and Bolivia, along Cordillera de los Andes. Some specimens of "carneipes," mentioned by Handlirsch from Mexico, probably belong to *P. barberi* sp. nov., because I have not seen any specimen of *carneipes* from Central America. The drawing of Handlirsch (Plate 5, fig. 9) represents the genuine *P. carneipes* Mayr.

Male.—Head short, as long as wide across eyes (♂, 19:19; ♀, 20:21); frontal processes short, blunt, slightly notched; ocellar processes small, blunt; proportions of antennal joints are: ♂, 5:9:9:17; ♀, 5:9:10:17.

Pronotum short and wide, strongly declivous anteriorly (♂, 38:51; ♀, 46:62); fore-border widely sinuated; anterior angles short, angulated; ALA-borders anteriorly almost straight, then strongly rounded, crenelated; lateral notch wide and deep; ALP-borders very long, convex, rounded, crenelated; lateral angles slightly inclined backwards, forming an obtuse angle, in females lower; PLA-borders short, and slightly sinuated; posterior angles angulated; protruding sideways; PLP-borders long and sinuated; fore-disk inflated, rugose and with rounded granulation; hind disk almost without granulation; carinæ divergent backwards, higher and granulated anteriorly, then lower and shiny.

Scutellum short (♂, 12:17; ♀, ?, scutellum of allotype broken); median carina cruciform, median ridge high, stout, shiny almost without granulation, lateral branches lower and granulated.

Hemelytra almost without granulation; membrane brownish.

Abdomen: ♂, AL-borders anteriorly sinuated, then from fourth connexivum; convex; lateral angles forming an obtuse angle; PE-angles blunt, scarcely protruding; Pe4 slightly protruding, blunt; PL-borders sinuated; ♀, AL- and PL-borders convex; lateral angles almost rounded.

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP reaching lateral angles; MM-pleuræ finely granulated.

Legs: Fore-femora short, inflated (♂, 24:13; ♀, 29:15); disk with very fine and obliterated granulation; UBF finely crenelated.

Coloration: Rather variable, generally specimens from South more reddish, and those from North paler. ♂, head dark testaceous; pronotum buff; lateral bands and lateral angles darker; scutellum testaceous with median ridge reddish and shiny; hemelytra brown with touch of violaceous, transversal band roseate; abdomen yellow, shiny, transversal band piceous to black; ventral surface testaceous to buff; median and posterior legs roseate; ♀, paler, yellow with buff and roseate; hemelytra brown with roseate; the median and hind femora roseate.

Total length: ♂, 8.0; ♀, 9.0 mm; width of pronotum: ♂, 3.2; ♀, 3.7 mm; width of abdomen: ♂, 4.3; ♀, 5.5 mm.

Patria: Brazil, Paraguay.

Type: ♂, Brazil; deposited in the Natural History Museum, in Vienna.

PHYMATA CARNEIPES SUBANGULATA ssp. nov.

Male.—In general similar to the typical form, but differs by the different shape of the abdomen: ♂, AL-borders slightly sinuated anteriorly, then scarcely convex; or almost straight from base to lateral angles; lateral angles forming a right, sharply marked, angle; PE-angles scarcely protruding, blunt; PL-borders slightly sinuated. ♀, AL- and PL-borders scarcely convex; lateral angles forming a slightly obtuse angle (about 100°), but sharply marked; coloration is more reddish, then in typical form; in other characters coincide with the typical form.

Biometrical measures: head: ♂, 18:18; ♀, 19:20; pronotum: ♂, 30; 47; ♀, 42:52; scutellum: ♂, 11:15; ♀, 13:18; abdomen: ♂, 60:70; ♀, 75:101; fore-femora: ♂, 23:12.5; ♀, 28:15:5;

proportions of antennal joints are: ♂, 5:10:9:16; ♀, 5:10:11:15.

Patria: Brazil (Rio Grande do Sul).

Holotype.—♂, Brazil, Rio Grande do Sul, Porte Alegre, October 1, 1930 (*Rev. Pio Buck, S. J.*). Deposited in the collection of the author.

Allotype.—♀, Brazil, Rio Grande do Sul, Porto Alegre; in the same collection.

Paratypes.—2 ♂ and 1 ♀, Brazil, Rio Grande do Sul, Porto Alegre (*Rev. Pio Buck, S. J.*).

83. PHYMATA PRAESTANS Handlirsch, 1897. Plate 13, figs. 283–286.

Phymata erosa ssp. *Praestans* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 172, Plate 5, fig. 7.

Phymata praestans KORMILEV, An. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 67.

Phymata praestans KORMILEV, Mis. Est. Pat. Reg. Arg. 23 (1952) 124.

Male.—Head short (♂, 23:22; ♀, 24:24); frontal processes stout, blunt, more or less deep cut out, slightly projecting beyond the tip of the first antennal joint; ocellar processes, stout granulated, inclined forwards; proportions of antennal joints are: ♂, 6:11:13:21: ♀, 7:12:14:20.

Pronotum less long than wide (♂, 51:81; ♀, 59:92), strongly declivous anteriorly (45 to 55°); fore-border deeply sinuated; anterior angles forming a slightly acute angle; ALA- and ALP-borders scarcely convex, rounded; lateral notch formed only by intersection of ALA- and ALP-borders, wide and shallow, angular, forming an angle of about 150°; lateral angles raised and in both sexes produced into long and slightly acute lobes; PLA-borders sinuated and distinctly shorter than PLP-borders, particularly in females (a distinctive character with *P. bergi* Kormilev); fore disk with subspiculoid, lying, granulation; hind disk with sparse and dispersed granulation; carinæ high and shiny, somewhat obliterated posteriorly, granulated anteriorly.

Scutellum; less long than wide (♂, 16:22; ♀, 19:26); median carina cruciform, with sparse and obliterated granulation.

Hemelytra almost without granulation; membrane brown.

Abdomen shiny, less long than wide (♂, 85:99; ♀, 96:125); ♂, AL-borders straight; PE-angles angulate, scarcely protruding; Pe4 is more protruding as an acute angle, directed slightly backwards; lateral angles forming a right or slightly obtuse angle; PL-borders scarcely sinuated; posterior border almost truncated, slightly notched in middle, ♀, AL more, PL-borders less convex; PE-angles more protruding, acute, Pe4 protruding as an almost right angle; lateral angles forming an obtuse angle of about 120°; posterior border rounded.

Pleuræ: Propleuræ finely granulated; fore-border finely denticulated inferiorly; AEP wide, reaching lateral angles; MM-pleuræ sparsely granulated.

Legs: Fore-femora moderate in size, inflated; dust with indistinct granulation; UBF finely crenelated.

Coloration: ♂, shiny, yellow with black, brown and testaceous; legs and transversal bands on connexiva reddish or roseate; ♀, paler, without black color.

Total length: ♂, 10.2; ♀, 11.5 to 12.0 mm; width of pronotum: ♂, 5.0; ♀, 5.8 mm; width of abdomen: ♂, 6.0; ♀, 7.8 mm.

Patria: Southeast Brazil, Paraguay.

Examined specimens: Various specimens from Rio Grande do Sul, Santa Catarina, Paraná, Rio de Janeiro, in Brazil, and Caaguazú in Paraguay.

This is one of the biggest species of the genus *Phymata* Latr., is rather closely allied, and was confused by Handlirsch, Pennington, and other characters, with some subspecies of *P. chilensis* Handlirsch (*uruguayensis* Kormilev and *brasiliensis* ssp. nov.). I have not seen a single specimen from Argentina, so that all data of Handlirsch and Pennington about the occurrence in Argentina should be referred to the *P. chilensis uruguayensis*. It is also allied to *P. bergi* Kormilev; the differences are mentioned in the key.

84. PHYMATA COMMUNIS Handlirsch, 1897. Plate 13, fig. 287; Plate 14, fig. 292.

Phymata fasciata STÅL (nec Gray), Rio Jan. trakt. Hem. fauna 1 (1860) 59.

Phymata fasciata STÅL, Enum. Hem. 5 (1876) 133.

Phymata fasciata BERG (nec Gray), Hem. Arg. (1879) 142.

Phymata fasciata ssp. *communis* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 169.

Phymata erosa var. "tipo communis" PENNINGTON, Physis 4 (1919) 523.

Phymata erosa var. *cruciata* PENNINGTON, Physis 4 (1919) 524.

Phymata erosa var. *communis* PENNINGTON, Lista Hem. Het. Rep. Arg. 2 (1921) 21.

Phymata stâli MELIN. Ark. Zool. (2) 22 (1930) 24.

Phymata melloi COSTA LIMA, Rev. Ent. Rio de Jan. 5 (1935) 23.

Phymata stâli KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 58.

Phymata communis Handlirsch is a big superspecies with a wide area of distribution from Perú and Central and Eastern Brazil to Buenos Aires and Mendoza in Argentina. It is noteworthy that in Central Argentina (Córdoba) it is very rare, and replaced by *P. chilensis* Handl., but is common in the "Litoral," along the Rio Paraná. Notwithstanding the great variability of this superspecies, I was not able to separate a single subspecies; the parameres also are very variable, between the limits of the general type.

Opaque and rather scabrous.

Male.—Head longer than wide across eyes (♂, 20:17; ♀, 21:19); frontal processes strong, directed forwards and slightly raised, deeply notched; ocellar processes robust, dentiform; proportions of antennal joints are: ♂, 5:8:9:16; ♀, 5:9:11:15.

Pronotum less long than wide (♂, 32:47; ♀, 36:55); fore-border deeply sinuated; anterior angles angulated, directed forwards; ALA-borders slightly convex, rounded, crenelated; lateral notch wide and deep; ALP-borders convex, rounded; lateral angles raised, forming an acute (♂), or obtuse (♀) angle; PLA-borders short, sinuated, sometimes almost straight; posterior angles angulated, more or less protruding sideways; fore disk scabrous, deeply punctated, and with sparse granulation; hind disk also scabrous, deeply punctated and almost without granulation; carinæ at base parallel, granulated, then divergent, do not form any ridge or tubercle on the top.

Scutellum rather long (♂, 13:16; ♀, 15:20); median carina cruciform, granulated.

Hemelytra with sparse granulation; membrane brown.

Abdomen less long than wide (♂, 50:64; ♀, 69:75), sometimes, the specimens from North Argentina, are very dilated laterally; AL- almost straight in typical form (from Rio de Janeiro), and sinuated in dilated form (♂), or almost straight, convex (♀); lateral angles forming a right angle in typical form, or slightly acute in dilated form (♂), obtuse or almost rounded in females; PE-angles slightly protruding, angular; Pe4 more protruding, acute; PL-borders slightly sinuated in typical form, more sinuated in dilated (♂), or convex (♀).

Pleuræ: Propleuræ granulated; fore-border denticulated; AEP reaching lateral angles; MM-pleuræ finely granulated.

Legs: Fore-femora almost twice as long as wide, inflated (♂, 25:13; ♀, 27:16); disk granulated; UBF crenelated.

Coloration: Rather variable: ♂, yellow, with black, brown and whitish (lateral notch); transversal band of hemelytra somtimes roseate or whitish; females paler, without black color; legs in both sexes yellow.

Total length: ♂, 6.9: ♀, 9.0 mm; width of pronotum: ♂, 2.9; ♀, 3.5 mm; width of abdomen: ♂, 4.1; ♀, 4.9 (the typical form).

Patria: Brazil, Uruguay, Argentina, Paraguay, Bolivia, Perú.

Designated lectotype.—♂, Brazil, Rio de Janeiro, with labels "Stål," and "communis det. Handlirsch," the cotype of *P. fasciata* Stål and *P. erosa* ssp. *communis* Handlirsch; deposited in the Natural History Museum, Stockholm.

Designated allolectotype.—♀, Brazil; with label "communis det. Handlirsch," the cotype of Handlirsch; deposited in the Natural History Museum in Vienna.

At my request, Prof. Dr. Angelo da Costa Lima kindly sent me a specimen of *Phymata melloi* Costa Lima, of which I was able to examine a paratype male. It has a darker coloration, the frontal processes are shorter, and lateral angles of the pronotum slightly lower than in the typical form, but as this superspecies is so variable, I could not separate it from the former.

85. PHYMATA BERGI Kormilev, 1950. Plate 14, figs. 293-294.

Phymata bergi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 586.
Phymata bergi KORMILEV, Mis. Est. Pat. Arg. 22 (1951) 57, fig. 4.

This species is known only in two female specimens. It is rather closely allied to *P. praestans* Handlirsch and *P. chilensis* ssp. *brasiliensis*, described further below, but can be easily distinguished, as indicated in the key.

Female.—Head longer than wide across the eyes (22:19); frontal processes long, directed forwards; ocellar processes very small, dentiform; proportions of antennal joints are: 6:9:11:16.

Pronotum less long than wide (39:68); fore-border slightly sinuated; anterior angles blunt, almost rounded, not protruding; ALA- and ALP-borders scarcely convex, crenelated; lateral notch very wide, formed only by intersection of ALA- and ALP-borders; lateral angles produced into long, acute lobes, somewhat inclined sideways; PLA-borders straight, as long as PLP-borders (a diagnostic character); posterior angles angulated, small; fore disk with lying, subspiculoid, granulation;

hind disk with very fine and sparse granulation; carinæ at base parallel and granulated, then divergent.

Scutellum less long than wide (15:25); median carina cruciform, sparsely granulated.

Hemelytra at the base with sparse, apically with dense, granulation; membrane brown.

Abdomen less long than wide (75:93); AL-borders slightly sinuated; PE-angles scarcely protruding; Pe4 more protruding, but apex blunt; lateral angles forming a slightly acute angle; PL-borders slightly sinuated; connexivum with sparse granulation.

Pleuræ: Propleuræ almost without granulation; fore-border denticulated inferiorly; AEP wide and long.

Legs: Fore-femora rather short (28:16), inflated; disk with indistinct granulation; UBF finely crenelated.

Coloration: Ochre-yellow, with brown and testaceous; lateral angles of abdomen piceous; connexiva partially and venter mostly orange.

Female.—Total length, 9.0 mm; width of pronotum, 4.0 mm; width of abdomen, 5.7 mm.

Patria: Uruguay, Brazil (Rio Grande do Sul).

Type: ♀, Uruguay, San Carlos; deposited in Natural History Museum of Montevideo, Uruguay.

86. PHYMATA CHILENSIS Handlirsch, 1897. Plate 14, figs. 295–313.

Phymata carinata SPINOLA (nec Fabricius), in Gay Hist. de Chile 7 (1852) 207, Plate 2, fig. 12.

Phymata carinata SIGNORET, Ann. Soc. Ent. Fr. (4) 3 (1863) 574.

Phymata carinata BERG, Hem. Arg. (1879) 141.

Phymata erosa ssp. *chilensis* HANDLIRSCH, Ann. Naturh. Hofmus., Wien 12 (1897) 171.

Phymata carinata REED, Rev. Chil. Hist. Nat. 5 (1901) 83.

Phymata erosa ssp. *chilensis* PENNINGTON, Physis 4 (1919) 524, fig. 26.

Phymata erosa ssp. chilensis PENNINGTON, Lista Hem. Het. Rep. Agr. 2 (1921) 21.

Phymata carinata MELIN, Ark. Zool. (2) 22 (1930) 26.

Phymata monrosi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 585.

Phymata carinata KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 67.

Phymata monrosi KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 74.

As I have said previously, it is not probable that *Phymata carinata* Spinola can be identical with *Phymata carinata* Fabricius, so that for the first we should accept the name of

Handlirsch, *Phymata chilensis* Handl. *Phymata monrosi* Kormilev (1950) was described as a species, but now, basing on the more numerous material, I came to the conclusion that it should be considered as a subspecies of *P. chilensis* Handl., because some of the examined specimens are clearly intermediate between *P. monrosi* Kormilev and *P. chilensis* Handl. s. str.

PHYMATA CHILENSIS CHILENSIS Handlirsch, 1897. Plate 14, figs. 299–301.

Phymata carinata SPINOLA (nec Fabricius) in Gay Hist. de Chile 7 (1852) 207.

Phymata carinata SIGNORET, Ann. Soc. Ent. Fr. (4) 3 (1863) 574.

Phymata erosa ssp. *chilensis* HANDLIRSCH, Ann. Naturh, Hofmus., Wien 12 (1897) 171.

Phymata carinata REED, Rev. Chil. Hist. Nat. 5 (1901) 83.

Phymata carinata MELIN, Ark. Zool. (2) 22 (1930) 26.

Phymata carinata ssp. *chilensis* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 69, fig. 65, 66.

Male.—Head longer than wide across eyes (♂, 20:18; ♀, 21:19); frontal processes stout, blunt, directed forwards, distinctly notched, project beyond the tip of the first antennal joint; ocellar processes low, blunt, tuberculiform, granulated; the proportions of antennal joints are: ♂, 5:9:10:16; ♀, 6:8:11:14.

Pronotum less long than wide (♂, 35:52; ♀, 40:60); foreborder deeply sinuated; anterior angles angulated; directed forwards; ALA-borders slightly convex, rounded, crenelated; lateral notch very wide, shallow, rounded; ALP-borders almost straight, scarcely convex; lateral angles raised, but not drawn out, forming an obtuse angle with blunt tip; PLA-borders short and slightly sinuated; posterior angles angulated, almost dentiform, directed sideways; fore disk with lying, subspiculoid granulation; hind disk almost without granulation; carinæ without ridge or tubercle.

Scutellum less long than wide (♂, 13:18; ♀, 14:20); median carina subcruciform, granulated.

Hemelytra practically without granulation; membrane brown.

Abdomen almost as long as wide (♂, 61:62; ♀, 80:78); AL-borders straight (♂) or scarcely convex (♀); PE-angles not protruding; Pe4 protruding, acute; lateral angles forming an obtuse angle, but sharply marked; PL-borders straight (♂) or almost straight (♂) or almost straight (♀); connexivum granulated.

Pleuræ: Propleuræ with fine, dispersed granulation; fore-border denticulated inferiorly; AEP reaching lateral angles; MM-pleuræ granulated.

Legs: Fore-femora short (♂, 25:13; ♀, 28:15); disk with indistinct granulation; UBF crenelated.

Coloration: ♂, yellow to pale yellow, with brown to piceous; hind disk of pronotum buff with touch of roseate; hemelytra yellow brown at base, roseate in middle and apically; ♀, paler without piceous color. In general the coloration is variable, sometimes roseate passes to violaceous; it seems that the specimens from Andine and sub-Andine areas are more roseate and violaceous, and those from the plains are more yellow.

Total length: ♂, 7.7; ♀, 9.3 mm; width of pronotum: ♂, 3.7 mm; width of abdomen: ♂, 3.9; ♀, 4.8 mm.

Patria: Chile, Perú.

Designated lectotype.—♀, Chile, ex-collection of Signoret, with labels: "carinata Fab.," and "chilensis det. Handlirsch"; deposited in the Natural History Museum in Stockholm.

Designated allolectotype.—Chile, ex-collection of Signoret; in the same museum.

Examined specimens: Various specimens from Chile: Santiago, Aconcagúa, Bio-Bio, Angol.

PHYMATA CHILENSIS MONROSI Kormilev, 1950. **Plate 14, figs. 295-298.**

Phymata monrosi KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 585.
Phymata monrosi KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 74, fig. 67.

Male.—Similar to *P. chilensis* Handl. s. str., but more elongated and distinctly more flat, particularly the lateral angles of the pronotum are lower, directed more sideways. AL-borders slightly sinuated (♂), or slightly convex (♀); lateral angles of abdomen almost rounded, never sharply marked (♂), or rounded (♀); abdomen as long or longer than wide.

Biometrical measures: head, ♂, 20:17; ♀, 21:18; pronotum, ♂, 31:50; ♀, 32:53; scutellum, ♂, 13:18; ♀, 14:20; abdomen,

♂, 61:61; ♀, 78:72; fore-femora, ♂, 24:13; ♀, 26:13; proportions of antennal joints are: ♂, 5:8.5: 10:16; ♀, 6:8:10:15.

Coloration: Reddish-brown with piceous and black; hemelytra with a touch of roseate or violaceous; females paler, brown with yellow; hemelytra roseate.

Total length: ♂, 7.8; ♀, 8.9 mm; width of pronotum: ♂, 3.0; ♀, 3.2 mm; width of abdomen: ♂, 3.6; ♀, 4.4 mm.

Patria: Argentina (Tucumán, Salta, Jujuy), Bolivia.

Type: ♂, Argentina, Tucumán, Anta Muerta (*F. Monrós*); deposited in the Instituto Lillo, Tucumán, Argentina.

PHYMATA CHILENSIS CORDOBENSIS Kormilev, 1951. Plate 14, figs. 302–304.

Phymata carinata ssp. *cordobensis* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 70.

Male.—Relatively bigger and wider than *P. chilensis monrosi*, not so depressed, and with abdomen in both sexes less long than wide; frontal processes generally longer, though apically blunt; ALA- and ALP-borders slightly convex; lateral angles of pronotum, though slightly raised, subvertical, slightly inclined sideways, forming a sharply marked, obtuse angle, often terminated with a small tooth; AL-borders at base sinuated, then, from fourth connexivum, convex; Pe4 protruding as an acute angle, but lateral angles of abdomen forming an obtuse angle in both sexes; PL-borders straight (♂), or convex (♀).

Biometrical measures: Head, ♂, 21:19; ♀, 23:19; pronotum, ♂, 32:56; ♀, 39:61; scutellum, ♂, 13:19; ♀, 15:22; abdomen, ♂, 67:83; ♀, 79:87; proportions of antennal joints are: ♂, 6:8:10:16; ♀, 6:8:11:14.

Coloration: Generally yellow with brown and black, females paler, yellow with brown; in sub-Andine area specimens often with more of black color, and with a touch of roseate, particularly hemelytra roseate; in the southern part of Córdoba ochraceous, rarely brown and dark brown.

Total length: ♂, 8.3; ♀, 9.5 mm; width of pronotum: ♂, 3.3; ♀, 4.0 mm; width of abdomen: ♂, 5.0; ♀, 5.2 mm.

Patria: Central Argentina (Córdoba, San Luis, Mendoza, Rio Negro).

Type: ♂, Argentina, Córdoba, Calamuchita (*M. J. Viana*); deposited in the Argentina Natural Science Museum, Buenos Aires.

PHYMATA CHILENSIS PAMPEANA Kormilev, 1951. **Plate 14, figs. 305-307.**

Phymata carinata pampeana KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 71, fig. 64.

Male.—Slightly bigger than *P. chilensis cordobensis* and wider; frontal processes longer, and more deeply notched; ALA- and ALP-borders scarcely convex; lateral angles of the pronotum more raised than in the preceding subspecies, terminated with an acute tooth, directed up and forwards, more acute in the males; AL-borders at base scarcely sinuated, from fourth connexivum scarcely convex; Pe4 is very protruding, produced in an acute tooth; the lateral angles of the abdomen forming a slightly acute (♂), or almost right angle (♀).

Biometrical measures: Head, ♂, 22:18; ♀, 23:21; pronotum, ♂, 38:66; ♀, 41:69; scutellum, ♂, 15:19; ♀, 17:23; abdomen, ♂, 78:92; ♀, 80:103; fore-femora, ♂, 29:16; ♀, 27:15; proportions of antennal joints are: ♂, 6:8:10:15; ♀, 6:9:11:15.

Coloration: Yellow with piceous and black, females paler, yellow with brown; but there are specimens ochraceous with brown.

Total length: ♂, 8.5; ♀, 10.00 mm; width of pronotum: ♂, 4.0; ♀, 4.3 mm; width of abdomen: ♂, 5.6; ♀, 6.4 mm.

Patria: Argentina (Buenos Aires, La Pampa, Rio Negro, Neuquen, Zona Militar Comodoro Rivadavia).

Type: ♂, Argentina, Buenos Aires, Sierra de la Ventana, Tornquist (*A. Bachmann*); deposited in the Institute Lillo, Tucumán.

This is the most southern subspecies of the subfamily and family, one specimen was found at the coast of the St. George Gulf in Middle Patagonia (Zona Militar Comodoro Rivadavia).

PHYMATA CHILENSIS URUGUAYENSIS Kormilev, 1951. **Plate 14, figs. 308-310.**

Phymata carinata uruguayensis KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 72, fig. 62.

Male.—Similar to *P. chilensis pampeana*, of same size and width, but frontal processes long and acute, slightly raised; lateral angles of pronotum raised and produced into acute lobes, terminated with a tooth, inclined forwards; abdomen very wide; AL-borders at base sinuated, from fourth connexivum convex; lateral angles of abdomen forming an acute (♂), or right (♀) angle; Pe4 long and acute; PL-borders sinuated (♂), or straight (♀); the specimens from the North are wider.

Biometrical measures: Head, ♂, 23:19; ♀, 26:21; pronotum, ♂, 39:63; ♀, 44:70; scutellum, ♂, 16:20; ♀, 17:23; abdomen, ♂, 70:95; ♀, 77:101; fore-femora, ♂, 28.16; ♀, 31:16; the proportions of the antennal joints are: ♂, 6:8:11:16; ♀, 6:10:11:14.

Coloration: The specimens from Uruguay and East Argentina (Entre Rios) generally paler, pale yellow with buff and brown in both sexes; those from the North (Argentine Chaco and Paraguay) darker, yellow with piceous and black, females yellow with brown.

Total length: ♂, 9.0; ♀, 9.6 mm; width of pronotum: ♂, 3.9; ♀, 4.5 mm; width of abdomen: ♂, 5.7; ♀, 6.1 mm.

Patria: Uruguay, Argentina (Entre Rios, Corrientes, Chaco), Paraguay (?).

Type: ♂, Uruguay, Piriapolis (*A. Pirán*); deposited in the collection of Ministerio de Agricultura y Ganaderia, División Zoología Agrícola, Buenos Aires.

PHYMATA CHILENSIS BRASILIENSIS ssp. nov. Plate 14, figs. 311-313.

Male.—In general similar to *P. chilensis uruguayensis*, but the frontal processes apically blunt; lateral angles of pronotum produced into long and acute lobes; inclined sideways, without a tooth on tip; posterior angles acute; more protruding, dentiform, directed sideways; scutellum very long (16:18), abdomen forming almost a perfect quadrat, with AL- and PL-borders straight, and lateral angles rectangular; Pe4 slightly protruding, acute; fourth antennal joint relatively longer.

Biometrical measures: Head, 24:20; pronotum, 38:65; scutellum, 16:18; abdomen, 65:90; fore-femora, 30:15; proportions of antennal joints are: 6:8:11:17.

Coloration: Bright-yellow with black; hemelytra dark-brown with transversal band paler, pale-brown.

Male.—Total length, 8.8 mm; width of pronotum, 4.0 mm; width of abdomen, 5.4 mm.

Patria: Brazil (Estado Rio).

Type: ♂, Brazil, Estado Rio, Estrada Rio—Sâo Paulo, 47 km, October 2, 1945 (*Dr. P. Wygodzinsky*); deposited in the collection of Dr. Wygodzinsky, Tucumán, Argentina.

TABLE 1.—*Comparative data for the subspecies of Phymata chilensis Handl.*

Males	*chilensis* s. str.	*monrosi*	*cordobensis*	*pampeana*	*uruguayensis*	*brasiliensis*
Frontal processes	blunt	blunt	blunt	longer, blunt apically	long acute apically	long blunt apically
Lateral angles of the pronotum	slightly raised, obtuse	low, obtuse	raised, rectangular, sometimes with tooth	raised acute, with tooth	long, acute with tooth	long, very acute, but without tooth
Scutellum	13:18	13:18	13:19	15:19	16:20	16:18
AL-borders	straight	slightly sinuated.	sinuated/ convex	sinuated/ convex	sinuated/ convex	straight
Lateral angles of the abdomen	obtuse, but sharply marked	obtuse, blunt apically	obtuse	rectangular	produced, acute	rectangular
PL-borders	straight	straight	straight	slightly sinuated	slightly sinuated	slightly sinuated
Total length/ width of pronotum	2.47:1	2.60:1	2.51:1	2.25:1	2.31:1	2.19:1
Total length/ width of abdomen	1.98:1	2.17:1	1.66:1	1.34:1	1.58:1	1.62:1
Coloration	yellow, brown, black, roseate	yellow, brown black, roseate	yellow, brown or black; sometimes roseate	yellow or ochraceous brown	pale yellow, brown, or black	yellow, brown, black

B. Subgenus NEOPHYMATA novum

Subgenotype: *P. bosqui* Kormilev.

87. PHYMATA BOSQUI Kormilev, 1950. **Plate 15, figs. 314–317.**

Phymata bosqui KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 589.
Phymata bosqui KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 81, fig. 4.

Male.—Head longer than wide across the eyes (18:16); frontal processes stout, almost erect, slightly divergent, and somewhat displaced backwards, so that fore-border of frontal plate can be seen before them; ocellar processes stout, dentiform; proportions of antennal joints are: ♂, 5:7:6:23; ♀, 5:6:5:6.5:15, fourth joint of males long, stout, and cylindrical.

Pronotum less long than wide (32:43); fore-border widely sinuated; anterior angles rectangular, short, directed forwards; ALA-borders almost straight, scarcely sinuated, and irregularly crenelated, with some teeth stronger; lateral notch small, slightly sinuated; ALP-borders scarcely sinuated and strongly crenelated; whole antero-lateral border three times sinuated; ALP- and PLA-borders reborded, subvertical; lateral angles marked only as a stout granula or tooth, directed up and slightly sideways; PLA-borders long and almost straight; posterior angles angular, slightly protruding side and backwards; posterior processes very small and distant from scutellum; fore-disk anteriorly in middle with an inverted, smooth triangle, of latter scabrous and granulated laterally, on hind border, at base of carinæ, provided with two (1 + 1) tubercles; hind disk scabrous, deeply punctated, but almost without granulation; carinæ high, at base parallel, then divergent, with obliterated granulation, and with a high tubercle on top.

Scutellum less long than wide (11:16); median carina high, linear, densely granulated; disk without granulation.

Hemelytra slightly granulated posteriorly; membrane piceous, shiny.

Abdomen dilated laterally, less long than wide (49:73); AL-borders at base straight, from middle of third connexivum abruptly dilated, exterior border of fourth convex at base, then sinuated; fourth connexivum on ventral surface provided with narrow, but distinct ultra-connexivum; PE-angles protruding, tuberculiform, Pe3 more protruding, Pe4 acute, dentiform; fifth connexivum slightly convex, more protruding than sixth; discs of connexiva on dorsal surface slightly concave.

Pleuræ: Propleuræ almost without granulation; the fore-border denticulated; AEP deep, but narrow, not reaching lateral angles; MM-pleuræ sparsely granulated only at the borders.

Legs: Fore-femora long (23:11); the disk rather flat, without granulation; UBF crenelated.

Coloration: Head, fore disk of pronotum, with exception of smooth triangle, which is black, transversal band of hemelytra, propleuræ and venter, pale-ochraceous; connexivum ivory, with fore- and hind borders of third brown, and transversal band of abdomen walnut-brown; hind disk of pronotum and transversal band of abdomen walnut-brown; hind disk of pronotum and hemelytra ochre-brown, partially variegated with ochraceous; female paler.

Total length: ♂, 6.3; ♀, 7.0 mm; width of pronotum: ♂, 2.5; ♀, 2.6 mm; width of abdomen: ♂, 4.8; ♀, 4.8 mm.

Patria: Argentina (Santiago del Estero, Córdoba).

Type: ♂, Argentina, Santiago del Estero, Campo del Cielo (*J. M. Bosq*); deposited in the collection of Bosq, Buenos Aires.

This species is dedicated to Mr. Jean Maria Bosq, its first name was *Phymata bosqui*, but conforming to the "Régles," it should be named *Phymata bosqui*. The basal-plate struts in this species are strong and apically forming a hook, therefore I have separated it in a different subgenus, named *Neophymata*. (Figs. 13–15)

C. Subgenus EURYPHYMATA novum

Subgenotype: *P. superba* sp. nov.

88. PHYMATA SUPERBA sp. nov. Plate 17. fig. 356.

This species is so striking, that Dr. H. G. Barber put the label "New Gen.-sp. *Has tarsi*." But, notwithstanding its extraordinary shape, this species has all characters of the genus *Phymata* Latreille, and none could justify the separation in a different genus, though its phallus has the basal plates and basal-plate struts so extraordinary stout, that this species could be separated in a different subgenus, named *Euryphymata*. (Figs. 16–20)

Male.—Head short (12:12); frontal processes strong, directed up and sideways, each of processes composed of two teeth; head not notched anteriorly; preocellar processes dentiform, directed up, out and forwards; ocellar processes dentiform, blunt, inclined forwards and slightly divergent; antennæ with three basal joints very short and slender, apical very long, stout, cylindrical; proportions of antennal joints are: 5:8:4:40. Granulation of head sparse, but paler than background, therefore conspicuous.

Pronotum less long than wide (26:41); fore-border widely notched, densely granulated; anterior angles dentiform, long, directed forwards; ALA-borders expanded, almost angular, irregularly denticulated; lateral notch small, slightly sinuated, almost absent; ALP-borders short, almost straight, subhorizontal, strongly denticulated, abruptly terminated posteriorly with a strong, vertical tooth, lateral angles; PLA-borders short, slightly sinuated and denticulated; posterior angles dentiform, slender, protruding up, out and slightly backwards; PLP-borders long, twice as long as PLA-borders, slightly sinuated and with indistinct, small, granulæ; posterior processes very small; posterior border angularly notched; fore disk inflated, anteriorly in middle with an inverted, smooth, piceous, shiny, triangle, laterally of it with irregular granulation of various sizes; hind disk very finely punctated, but without granulation; carinæ slightly divergent, at base high, narrow and with dense granulation, provided with a granulated tubercle on top, back of latter somewhat obliterated, with sparse granulæ of various sizes; posteriorly high, stout, but almost without granulation.

Scutellum relatively small (8:12); disk inflated and without granulation; median carina linear, very stout, and granulated, towards tip of scutellum finely granulated.

Hemelytra not reaching tip of abdomen; almost without granulation; membrane piceous.

Abdomen less long than wide (59:83), strongly dilated laterally, produced posteriorly backwards, terminated with two (1 + 1) upturned, triangular lobes, its general shape somewhat similar to an ornate cross. AL-borders regularly divergent in a straight line till middle of third connexivum, then abruptly dilated; fourth more dilated, its exterior border almost S-form, firstly directed sideways, and without teeth, then curved back and upwards, provided with a few small teeth, from middle sinuated and almost without teeth, raising more and terminated with two strong teeth or triangles, finely denticulated, lateral angles; PE-angles protruding, dentiform; Pe4 strongly protruding, acute, dentiform; PL-borders also almost S-form, fifth connexivum before middle and provided posteriorly with strong angular lobe or tooth; sixth twice deeply notched laterally, in middle produced backwards, upturned and terminated with two (1 + 1) triangular lobes. Discs of connexiva on dorsal surface slightly concave with ground irregularly depressed and elevated, particularly on fourth and fifth connexiva. On ventral surface venter very scabrous, with sparse and dispersed granulation; sternites with various irregular depressions and elevation, and on median line with a furrow; pygophore big and flat, with granulation in form of "Y" on median line; spiracles relatively small; fourth connexivum with a distinct ultra-connexivum, separated from disk by a fine carina, situated obliquely from Pe3 to notch between fourth and fifth connexiva.

Pleuræ: Propleuræ smooth, a row of granulæ runs along inferior border of AEP and another across disk, separating from first and touching third, latter runs parallel, but at a distance, with inferior border of propleuræ, two closing a dark triangle, AEP wide and deep, reaching lateral angles. MM-pleuræ smooth, but granulated at borders.

Legs: Fore-femora big and very inflated (16:9), smooth, without granulation; UBF crenelated posteriorly, anteriorly without granulæ or teeth. The median and hind femora denticulated.

Sternum: Cross of mesosternum with fore branch long, fine, narrow, granulated; lateral branches bifurcated exteriorly and without granulation.

Coloration: On dorsal surface: head and antennæ brown to piceous, frontal processes almost black; fore disk of pronotum brown to piceous; ALA-borders walnut-brown, rebordec with piceous; hind disk ochre-brown, reborded with piceous; disk of scutellum ochre-brown, median carina darker; granulation of pronotum and scutellum dirty white; hemelytra brown with paler stripes, walnut-brown; transversal band of hemelytra piceous; tergum of abdomen transversely striped with ochre-brown and piceous; connexivum walnut-brown or chestnut-brown, partially reborded with piceous; two (1 + 1) spots situated near anterior angles of pronotum and ovate or guttiform spots on connexiva second and third formed by a fine, color of mother-of-pearl, incrustation; similar spots, but bigger situated on the connexivum fourth. Ventral surface irregularly brown and piceous, with reddish-brown and ochre-brown spots; mesopleuræ and mesosternum reddish-brown; AEP ochre-brown; cross of mesosternum grayish-brown; stridulatory groove pale reddish-brown; fore-femora piceous, shiny, with teeth of UBF ochre-brown; median and hind femora piceous with ochre-brown granulation.

Male.—Total length, 10.0 mm; width of pronotum, 4.0 mm; width of abdomen, 8.1 mm.

Patria: Haití.

Holotype.—♂, Haiti Port-au-Prince, August 15, 1924 (W.A. Hoffman). Deposited in the U. S. National Museum, Washington.

D. Subgenus PHYMATISPA Kormilev, 1951

Subgenotype: *P. fortificata* H. Sch.

Phymata subgen. *Phymatispa* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 83.

This subgenus was separated from the subgenus *phymata* Latr. s. str. by the bifurcated parameres, which have one point long, naked and curved more or less at a right angle to the basal axis, an danother, much shorter, covered with strong bristles, separating at a sharp angle from the basal axis. In this subgenus I put only two species, very different exteriorly, but both having the bifurcated paramers. (Figs. 21–23)

Phymata fortificata H. Sch. sensu novum is formed by four species: *P. fortificata* H. Sch. (1844), *P. argentina* Pennington (1919), *P. tessera* Hoberlandt (1947), and *P. sanjuanensis* Kormilev (1950). It is a big superspecies, of which *P. fortificata* H. Sch. s. str. is an extreme, *P. tessera* Hoberlandt another extreme, *P. sanjuanensis* Kormilev is intermediate between them. *P. tessera* Hoberlandt and *P. argentina* Pennington are rather badly separated from each other. This had induced me in the year 1951 to synonymize these two species. But now I am inclined to separate them as subspecies, because, though they probably intercross between themselves in the point of contact, producing intermediate forms, their areas of distribution are different: *P. tessera* is distributed more in the dry-woods of Chaco-formation, and *P. argentina* is more limited to Córdoba, San Luis, Mendoza, also dry, but somewhat different formation. *P. fortificata* H. Sch. s. str. and *P. sanjuanensis* can be distinguished from two subspecies, *P. fortificata paranensis* Kormilev and *P. fortificata patagonica* Kormilev, the first more allied to the former, and the second rather closely allied to the latter. Between *P. argentina* Pennington and *P. sanjuanensis* Kormilev we have also an intermediate subspecies, *P. argentina montana* Kormilev. So we have two big groups: "fortificata group" with three subspecies, and "argentina group," also with three subspecies; between these groups we have an intermediate subspecies *sanjuanensis*. In the year 1950, I have described *sanjuanensis* as a species, only while I could not decide into which of these two groups to place *sanjuanensis*. Now I think that the natural solution is to consider all these subspecies as subspecies of *fortificata*.

89. PHYMATA FORTIFICATA Herrich Schaeffer, 1844. Plate 15, figs. 318–332.

Syrtis fortificata Herrich Schaeffer, Wanz. Ins. 7 (1844) 15, Plate 222, fig. 695.

Macrocephalus fortificatus Walker, Cat. Hem. Het. Brit. Mus. 6 (1873) 175.

Phymata fortificata Stål, Enum. Hem. 5 (1876) 132.

Phymata fortificata Handlirsch, Ann. Naturh. Hofmus., Wien 12 (1897) 173, Plate 4, fig. 5.

Phymata fortificata Pennington, Physis 4 (1919) 524.

Phymata fortificata PENNINGTON, Lista Hem. Het. Rep. Arg. 2 (1921) 21.

Phymata fortificata JENSEN HAARUP, Saer. Ent. Medd. 14 (1922) 5.

Phymata argentina JENSEN HAARUP, Idem 14 (1922) 5.

Phymata fortificata DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 162.

Phymata argentina DUDICH, Idem 19 (1922) 171.

Phymata fortificata MELIN, Ark. Zool. (2) 22 (1930) 30.

Phymata argentina MELIN, Idem (2) 22 (1930) 31.

Phymata tessera HOBERLANDT, Rev. Bras. Biol. 7 (1947) 323.

Phymata sanjuanensis KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 590.

Phymata fortificata KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 85.

Phymata sanjuanensis KORMILEV, Idem 2 (1951) 91.

Phymata argentina KORMILEV, Idem 2 (1951) 94.

This big superspecies is distributed on an enormous area, from Colombia and Guiana to North Patagonia, and from the Atlantic Ocean to the Cordillera de los Andes.

PHYMATA FORTIFICATA FORTIFICATA H. Sch., 1844. Plate 15, figs. 318-320.

Syrtis fortificata HERRICH SCHAEFFER, Wanz. Ins. 7 (1844) 15, Plate 222, fig. 695.

Phymata fortificata STÅL, Enum. Hem. 5 (1876) 132.

Phymata fortificata HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 173, Plate 4, fig. 5.

Phymata fortificata DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 162.

Phymata fortificata MELIN, Ark. Zool. (2) 22 (1930) 30.

Phymata fortificata KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 85, fig. 5.

Male.—Head longer than wide across eyes (♂, 28:23; ♀, 30:25); frontal processes strong, deeply cut out, protruding forwards, and sometimes slightly raised; preocellar processes dentiform, long, inclined forwards, always raised above frontal plate; ocellar processes long, dentiform, sometimes ramificated; proportions of antennal joints are: ♂, 5:12:11:25; ♀, 5:12:13:18; in this subspecies the fourth antennal joint of males as long or longer than second and third together. Granulation strong, spiculiform.

Pronotum strongly declivous anteriorly (about 45°), less long than wide (♂, 48:80; ♀, 52:82); fore-border widely cut out;

anterior angles dentiform, long and slender, directed forwards; ALA-borders protruding upwards as long, acute, denticulated on borders, lobes, slightly inclined forwards; lateral notch wide and very deep, sometimes deeper than wide, directed somewhat backwards; ALP-borders together with PLA-borders forming big, deeply notched anteriorly, lobes, directed up and forwards, with two points; tip of ALA-lobe and tip of genuine lateral angles; PLA-borders very long, slightly convex and crenelated; posterior angles rectangular, protruding sideways; PLP-borders also very long, sinuated and crenelated; posterior processes small; fore disk with sparse, erect, spiculæ; anteriorly with an inverted, smooth triangle; on posterior border, at base of carinæ with two (1 + 1) long, acute, erect spines; hind disk covered with dispersed, short, erect, spiculæ, but without punctation; carinæ high, divergent backwards, each with a long, acute, erect spine on top, before and back of it with sparse spiculoid granulation.

Scutellum less long than wide (♂, 20:27; ♀, 23:30); median carina linear, strong, covered with spiculæ.

Hemelytra with fine and sparse granulation, but without punctation; membrane white, hyaline.

Abdomen strongly dilated laterally, its lateral projections directed slightly forwards; less long than wide (♂, 70:123; ♀, 82:132); AL-borders regularly dilated to middle of connexivum III, then more strongly but not abruptly dilated; PE-angles protruding as strong spines, exterior borders of connexiva I to III sinuated; connexivum IV short and very wide, three to three-and-a-half times as wide as long at its interior border, its exterior border firstly sinuated then convex; Pe4 protruding as an acute angle; PL-borders slightly sinuated; in females AL- and PL-borders less sinuated.

Pleuræ: Propleuræ with short and erect spiculæ; fore-border finely crenelated, inferiorly with a few long teeth; AEP narrow and very deep, reaching lateral notch; MM-pleuræ with dense and short spiculoid granulation.

Legs: Fore-femora big and inflated (♂, 35:34; ♀, 38:23); the disk with spiculoid granulation; UBF denticulated.

Coloration: Rather variable; males much darker; reddish-brown, or yellow-brown, with black and piceous; anterior angles and lateral notch of pronotum, and connexiva I to III pale-yellow, latter with black spots and stripes; transversal band of abdomen black; females also variable, but paler: yellow-brown, reddish-brown, or brown with touch of roseate, with paler and darker spots, transversal band of abdomen sometimes concolor with main color of body.

Total length: ♂, 9 to 10; ♀, 11 to 12 mm; width of pronotum: ♂, 4.5 to 4.8 ♀, 5 to 5.3 mm; width of abdomen: ♂, 7.3 to 7.6; ♀, 7.8 to 8.2 mm.

Patria: Tropical South America: Central Brazil, tropical Bolivia, Paraguay and NE-Argentina, and, according to Handlirsch, Colombia, and Guiana.

Examined specimens: various specimens from Brazil (Goyaz, Rio de Janeiro, Sáo Paulo, Mato Grosso, Paraná, S. Catarina). Argentina (Misiones), Paraguay, and Bolivia (Santa Cruz).

PHYMATA FORTIFICATA PARANENSIS Kormilev, 1951.

Phymata fortificata paranensis KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 88, fig. 70.

Male.—In general similar to typical subspecies, but fourth antennal joint of males shorter, less long than second and third together; preocellar processes not raised above level of frontal plates; frontal processes generally more raised, sometimes subvertical, in specimens more from South, slightly shorter; lateral notch of pronotum generally less deep, and all processes shorter; PE-angles also shorter; lateral projections of abdomen directed sideways, not slightly forwards, as in typical subspecies.

All these indicated characters are rather variable, some specimens from the North being very similar to the typical subspecies, and from the South to the next subspecies *P. fortificata patagonica* Kormilev. Coloration is also variable, but paler, with less black color.

Total length: ♂, 8.9; ♀, 10.4 mm; width of pronotum: ♂, 4.3; ♀, 4.5 mm; width of abdomen: ♂, 5.5; ♀, 8.4 mm.

Patria: Southern Brazil (Rio Grande do Sul), East Argentina (Corrientes, Sante Fé, Entre Rios, Buenos Aires), Uruguay, Paraguay.

Type: ♂, Argentina, Santa Fé, Garay, Colonia Mascias (M. J. Viana); deposited in the Argentine Natural Science Museum, Buenos Aires.

PHYMATA FORTIFICATA PATAGONICA Kormilev, 1951. Plate 15, figs. 321-322.

Phymata fortificata patagonica KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 89, fig. 71.

Male.—Generally smaller and narrower than *P. fortificata paranensis;* head shorter, frontal processes being shorter and more upturned; fourth antennal joints of males always shorter than second and third together; preocellar processes do not rise above frontal plate; ALA-borders forming a much lower lobe, projections of ALP-borders and lateral angles also much shorter, notch between them shallower; abdomen less dilated laterally, and PE-angles forming shorter teeth.

Females sometimes bigger, with all processes more developed, therefore difficult to separate from *P. fortificata paranensis;* in this case, frontal processes respectively shorter, and PE-angles less protruding.

Coloration similar to *P. fortificata paranensis,* but males often darker.

Total length: ♂, 8.8; ♀, 8.9 mm; width of pronotum: ♂, 4.2 ♀, 4.4 mm; width of abdomen: ♂, 5.3; ♀, 5.7 mm.

Patria: Argentina (Rio Negro and Neuquen in North Patagonia).

Type: ♂, Argentina, Rio Negro (*Venturi*); deposited in the Argentine Natural Science Museum, Buenos Aires.

PHYMATA FORTIFICATA SANJUANENSIS Kormilev, 1950. Plate 15, figs. 323-324.

Phymata sanjuanensis KORMILEV, Rev. Ent. Rio de Jan. 21 (1950) 590.

Phymata sanjuanensis KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 91, fig. 6.

Male.—Similar to *P. fortificata patagonica,* and to the next subspecies, *P. fortificata montana* Kormilev. From first it differs by frontal processes shorter, shortest in species, not reaching tip of first antennal joint, completely upturned; ALA-borders forming a very obtuse angle; lateral notch shallow; ALP- and lateral angles forming very short, angular projections, notch between them scarcely marked; hind disk of pronotum on top of carinæ provided with tubercles and not spines; abdomen much less dilated laterally; PE-angles though dentiform, short, but slightly longer than in *P. fortificata montana;* from latter it differs also by AL-borders regularly dilated, not abruptly from connexivum IV.

Coloration similar to *P. fortificata patagonica.*

Total length: ♂, 8.4 to 8.8; ♀, 9.2 to 9.8 mm; width of pronotum; ♂, 3.5 to 4.2; ♀, 4.0 to 4.5 mm; width of abdomen: ♂, 5.2 to 5.9; ♀, 6.0 to 6.9 mm.

Patria: West Argentina (San Juan).

Type: ♂, Argentina, San Juan (*V. Corral*); deposited in the Argentine Natural Science Museum, Buenos Aires.

PHYMATA FORTIFICATA MONTANA Kormilev, 1951, comb. nov. Plate 15, figs. 325–326.

Phymata argentina montana KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 98, fig. 75.

Male.—Similar to *P. fortificata sanjuanensis,* but abdomen abruptly dilated from middle of connexivum III, similar as in *P. fortificata argentina* Pennington. Frontal processes upturned and very short, ALA-, ALP-, and projections of lateral angles very short, similar as in *P. fortificata sanjuanensis,* particularly in specimens from higher mountainous localities, in which case they are difficult to separate from the latter. In the lower areas it is more similar to *P. fortificata argentina,* existing in all transitory forms. In the specimens from the lower areas, San Luis and La Pampa, the PE-angles are longer than in *sanjuanensis,* but shorter than in *patagonica;* in the specimens from the higher areas, Mendoza, Catamarca, they are as long as in *sanjuanensis.* From *argentina* it differs mainly by all processes being shorter, and abdomen less dilated laterally.

Coloration rather variable, specimens from higher zone darker, similar to *sanjuanensis,* and from lower areas more similar to *argentina.*

Total length: ♂, 7.8 to 8.4 ♀, 8.8 to 9.4; width of pronotum: ♂, 3.6 to 3.8; ♀, 3.9 to 4.3 mm; width of abdomen: ♂, 4.9 to 5.6; ♀, 4.8 to 6.7 mm.

Patria: Argentina (Salta, Catamarca, La Rioja, San Luis, Southern Córdoba, La Pampa, and Mendoza).

Type: ♂, Argentina, La Rioja, Nevado de Famatina (1,600 to 1,800 m) (*A. Breyer*); deposited in the Argentine Natural Science Museum, Buenos Aires.

PHYMATA FORTIFICATA ARGENTINA Pennington, 1919. Plate 15, figs. 327–329.

Phymata fortificata var. *argentina* PENNINGTON, Physis 4 (1919) 525, Plate 1, figs. 16, 18; Plate 2, figs. 23, 25.

Phymata argentina JENSEN HAARUP, Saer. Ent. Medd. 14 (1922) 5, fig. 7.

Phymata argentina DUDICH, Ann. Mus. Nat. Hung. 19 (1922) 171.

Phymata argentina MELIN, Ark. Zool. (2) 22 (1930) 31.

Phymata argentina KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 94, fig. 72. 8

Male.—Similar to specimens of *P. fortificata montana* from lower areas, but bigger, and all processes more developed. It is intermediate between the latter and *P. fortificata tessera* Hoberlandt, and in the points of contact with these subspecies it is difficult to separate from them, but on the contrary rather sharply separated from *P. fortificata paranensis*, with which it has also points of contact in East Córdoba. Most characteristic difference with "fortificata s. str. group" is the AL-borders abruptly dilated from middle of connexivum III, rather shorter and more dilated abdomen, and relatively shorter PE-angles.

Coloration: Though similar to *montana* or *paranensis*, has more contrast: reddish-brown or chestnut brown, sometimes mahogany-brown, with ivory and black, yellow color almost absent. Exterior angles of the fifth tergum forming an obtuse angle.

Total length: ♂, 8.0 to 8.4; ♀, 8.5 to 8.7 mm; width of pronotum: ♂, 3.6 to 4.1; ♀, 3.8 to 3.9 mm; width of abdomen: ♂, 6.5 to 6.8; ♀, 6.3 to 6.9 mm; the real width of abdomen is difficut to measure, because the lateral angles are more or less upturned.

Patria: Central Argentina (Córdoba, Tucumán, lower parts of Salta and Catamarca).

Type: Cotypes of Pennington are in the collection of Dr. C. J. Drake, Ames, Iowa, U. S. A.

PHYMATA FORTIFICATA TESSERA Hoberlandt, 1947. Plate 15, figs. 330-332.

Phymata tessera HOBERLANDT, Rev. Bras. Biol. 7 (1947) 323, figs. 1, 2.

Phymata argentina forma KORMILEV, Rev. Ins. Nac. Inv., Cien. Nat., Bs. As. 2 (1951) 96, figs. 73, 74.

Male.—Similar to *P. fortificata argentina* Pennington, but abdomen more dilated laterally, sometimes enormously dilated, and generally abbreviated posteriorly. Exterior angles of tergum V (not connexivum IV) rectangular. Coloration similar to *argentina.*

Total length: ♂, 7.4; ♀, 8.6 mm; width of pronotum: ♂, 3.6; ♀, 4.1 mm; width of abdomen: ♂, 7.0; ♀, 8.3 mm; real width of abdomen difficult to measure, because lateral angles more or less upturned.

Patria: Argentina (Chaco, Formosa, Salta, Jujuy), Paraguay, tropical Bolivia (Santa Cruz).

Type.—♀, Argentina, Chaco (*Ohnheiser*); deposited in the National Museum in Praha.

To illustrate the relative development of the tergum V and its corresponding connexiva IV in the various subspecies of *Phymata fortificata* H. Sch. further below are given the measures of width for each subspecies, in other words, proportions: Connexivum IV: tergum V: connexivum IV.

fortificata H. S.	*paranensis* Korm.	*patagonica* Korm.	*sanjuanensis* Korm.	*montana* Korm.	*argentina* Penn.	*tessera* Hoberl.
♂, 20:42:20	19:40:19	15:35:15	12:38:12	14:34:14	16:36:16	21:40:21
♀, 21:46:21	17:43:17	17:43:17	———	15:40:15	17:43:17	20:42:20

90. PHYMATA PARADOXA Kormilev, 1952. Plate 16, figs. 333–337.

Phymata paradoxa KORMILEV, Mis. Est. Pat. Reg. Arg. 23 (1952) 126, fig. 2.

Male.—Head longer than wide across eyes (♂, 25:23; ♀, 26:23); frontal processes small, vertical, deeply cut out, reaching tip of first antennal joint; ocellar processes small, tuberculiform, granulated; ocelli big, protruding; genæ very inflated; proportions of antennal joints are: ♂, 7:12:10:38; ♀, 7:12:13:24, fourth joint of male very stout, long, cylindrical, that of female fusiform.

Pronotum strongly declivous anteriorly (about 45°); less long than wide (♂, 50:76; ♀, 53:86); fore-border deeply sinuated; anterior angles strong, acute, directed forwards, sparsely granulated; ALA- and ALP-borders together forming a roughly crenelated line, slightly convex anteriorly sideways, rounded, then directed somewhat upwards, and at last inwards, therefore, seen from above looks sinuated; lateral notch absent; lateral and posterior angles approximated to each other, PLA-borders very short, almost three times less long than PLP-borders; lateral angles forming a small rectangular lobe, directed upwards; posterior angles forming a slightly acute angle, roughly reborded and directed out and backwards; PLP-borders long and sinuated; posterior processes small and directed sideways (!); fore disk very scabrous, anteriorly with an inverted smooth triangle, finely granulated laterally; hind disk ocellated punctation, but without granulation, without punctation anteriorly, very smooth; carinæ strong, high, divergent backwards, more anteriorly, less granulated posteriorly.

Scutellum less long than wide (♂, 13:22; ♀, 17:24); median carina high, cruciform, with obsolete granulation, lateral branches very high.

Hemelytra very smooth, without either granulation or punctation; membrane dark brown.

Abdomen strongly dilated laterally, less long than wide (♂, 87:131; ♀, 100:135); AL-borders divergent in an almost straight line, slightly undulated, and crenelated; PE-angles not protruding, marked only as granulated tubercles; fourth connexivum exteriorly convex and with rough granulation, three times less long than wide (17:50), on disk concave; Pe4 protruding as a strong tooth or claw, directed out and upwards; PL-borders anteriorly (fifth connexivum) convex, posteriorly (sixth connexivum) slightly sinuated; posterior border rounded.

Pleuræ: Propleuræ finely granulated; fore-border with fine granulæ inferiorly with fine teeth; AEP anteriorly narrow and very deep, then wider and shallower, reaching four-fifths of the upper border; MM-pleuræ practically without granulation.

Legs: Fore-femora big, inflated, relatively short, (♂, 34:18; ♀, 39:23); disk without granulation; UBF finely crenelated.

Sternum: The cross of the mesosternum with fore branch granulated and raised backwards in a straight line, abruptly falls posteriorly in a convex line.

Coloration: Brown of various shades, from grayish-brown to ochre-brown, dark chestnut brown, or piceous, mostly very smooth, the inverted triangle of fore lobe of pronotum black, with fine, pale, median line.

Total length: ♂, 10.8; ♀, 11.9 mm; width of pronotum: ♂, 4.6; ♀, 5.1 mm; width of abdomen: ♂, 8.0; ♀, 8.2 mm.

Patria: Paraguay, Brazil (S. Catarina).

Type: ♂, Paraguay, Independencia, November 15, 1951 (*J. Foerster*); deposited in the collection of the author. The allotype, female, was from Brazil, Santa Catarina.

The big, striking species is singular in every point, it disrupts many correlations, which could be established in the species of the subgenus *Phymata* Latr. s. str., that is, in the *Phymata* s. str. the long, cylindrical fourth antennal joint of the males can be found only in the species with linear median carina of the scutellum, whereas *P. paradoxa* has cruciform median carina, and very long, cylindrical fourth antennal joint in the male; *P. fortificata* H. Sch. has linear median carina, very deep lateral notch of the scutellum, rough, spiculiform granulation of the body, lateral angles of the pronotum in the shape of a forwardly inclined, and notched anteriorly, big lobe; the PE-angles dentiform, very protruding; *P. paradoxa*, on the contrary, has a cruciform median carina, no lateral notch, very smooth, almost without granulation or punctation, body, not protruding PE-angles, and other characters.

Genus II. PARAPHYMATA novum

The head, thorax, scutellum, abdomen, and median and hind legs similar to genus *Phymata* Latrelle (1802), rostrum has second (visible) segment more slender than first, though stouter than third; fore legs relatively very small, with fore-femora in the form of an oblique parallelogram, slightly constricted in the middle, and denticulated on upper border, on fore lobe of disk provided with an ovate, ringlike elevation, depressed in middle; fore-tibiæ with tarsi; middle and hind tibiæ on dorsal surface rimmed laterally, as in genus *Phymata* Latreille. (Figs. 26–27 and 352–353)

Genotype: *Paraphymata saileri* sp. nov.

91. PARAPHYMATA SAILERI sp. nov. Plate 16, figs. 353-355.

Male.—Head as long as wide across the eyes (15:15), compressed laterally, higher than long (20:15); frontal processes short, upturned and slightly divergent, scarcely project beyond tip of first antennal joint; ocellar processes practically absent, and substituted by three granulæ; antennæ with fourth antennal joint very long, cylindrical; proportions of antennal joints are: 5:6.5:7:34. Scabrous, on dorsal surface with rounded granulation.

Pronotum almost triangular, with divergent back and raised lateral borders; less long than wide (31:70), anteriorly very narrow, almost as wide as head across eyes (16:15), across lateral angles more than four times wider than anteriorly (70:16); fore-border slightly sinuated; anterior angles not protruding, rounded; ALA- and ALP-borders forming together a very long straight line, only curved posteriorly, convex; lateral notch completely absent; lateral angles forming an acute angle, directed up and backwards; PLA-borders very short and deeply notched angularly; posterior angles approximated to lateral, almost rectangular, denticulated; PLP-borders long, deeply sinuated; posterior processes very small, convergent; posterior border notched angularly; fore disk relatively very small, scabrous, but almost without granulation, depressed anteriorly in form of "T," this depression is smooth, "chagriné"; back of this depression is situated the letter "M," formed by rounded granulation; hind disk scabrous, but without granulation; carinæ slender, divergent backwards, granulated, not reaching anteriorly hind border of fore lobe.

Scutellum relatively big, less long than wide (11:17); median carina linear, roughly granulated only at base and at tip; lateral borders rimmed and crenelated.

Hemelytra reaching tip of abdomen; membrane brownish.

Abdomen dilated laterally, less long than wide (72:110); AL-borders anteriorly straight, from connexivum IV abruptly dilated; PE-angles protruding, dentiform; Pe1 and Pe2 terminated with one, Pe3 with two teeth; exterior border of connexivum IV convex, rounded angularly and raised laterally, its antero-exterior angle is provided with a strong tooth, its postero-exterior angle rounded; lateral angles forming a slightly acute angle; PL-borders scarcely sinuated; posterior border widely rounded. Venter similar as in *Phymata* Latr., position of spiracles the same; pygophore similar as in *Phymata* Latr. Parameres as in *Phymata* s. str.

Pleuræ: Propleuræ finely punctated, and with fine and sparse granulation; fore-border finely denticulated; AEP very long, almost reaching lateral angles; MM-pleuræ granulated only at borders.

Sternum: Prosternum very short, deeply concave, and finely, transversely straited, stridulatory groove; mesosternum also short; its cross with fore branch long and high, remotely granulated, hind branch short, convex, declivous backwards and granulated, lateral branches without granulation; metasternum short, inflated.

Legs: Forecoxæ similar as in *Phymata* Latr., but short; trocanters big, inflated; fore-femora small, in form of an oblique parallelogram, in middle constricted two and a half times as long as wide (24:9); disk separated by a deep, transversal furrow into two lobes; fore lobe with an ovate, ring form elevation, in middle depressed and filled with whitish incrustation; hind lobe along fore-border (transversal furrow) inflated; upper border denticulated; disk without granulation; at upper angle of short fore-border attached relatively big fore-tibia, anteriorly with deep excavation for reception of relatively big tarsi. Median and hind legs similar as in *Phymata* Latr.

Coloration: Pale yellow-brown; clavus and corium ochre-brown; fourth antennal joints, pronotum, with exception of lateral borders, scutellum, and connexivum on dorsal surface, ferrugineous; sternum and base of venter pale yellow; eyes pale chestnut-brown.

Male.—Total length, 7.4 mm; width of pronotum, 4.4 mm; width of abdomen, 6.6 mm.

Patria: Haití.

Holotype.—♂, Haiti, Acc. Hinche, August 30, 1930 (*H. L. Dozier*). Deposited in the U. S. National Museum in Washington.

Through the good offices of Dr. Reece I. Sailer of the U. S. National Museum in Washington, I was able to receive for identification the Neotropical Phymatidæ. It is a pleasure to dedicate this striking species to him.

Genus III. ANTHYLLA Stål, 1876

Anthylla STÅL, Enum. Hem. 5 (1876) 131.

Phymata HANDLIRSCH (in partem), Ann. Naturh. Hofmus., Wien 12 (1897) 144.

Phymata subgen. *Anthylla* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 54.

Genotype: *Phymata nervoso-punctata* Signoret, 1863.

This genus is characterized by the median and hind tibiæ on the dorsal surface convex, rounded, without rims; forecoxæ as long as median femora, and anterior branch of mesosternal cross not reaching hind border of prosternum. Fore-femora similar as in *Phymata* Latreille. Rostrum with segment II as stout as I. (Figs. 24–25.)

92. ANTHYLLA NERVOSO-PUNCTATA Signoret, 1863. Plate 16, figs. 346–351.

Phymata nervoso-punctata SIGNORET, Ann. Soc. Ent. Fr. (4) 3 (1863) 574, Plate 13, fig. 25.

Phymata elongata SIGNORET, Idem (4) 3 (1863) 574, Plate 13, fig. 26.

Anthylla nervoso-punctata STÅL, Enum. Hem. 5 (1876) 134.

Anthylla elongata STÅL, idem 5 (1876) 134.

Anthylla elongata LETHIERRY & SEVERIN, Cat. Gén. Hem. 3 (1896) 28.

Anthylla nervoso-punctata LETHIERRY & SEVERIN, idem. 3 (1896) 28.

Phymata nervoso-punctata HANDLIRSCH, Ann. Naturh. Hofmus., Wein 12 (1897) 178, Plate 5, fig. 3.

Phymata (*Anthylla*) *nervoso-punctata* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 55.

This species has such a well developed sexual dimorphism that the opposite sexes were described as two different species, only Handlirsch has them synonymized.

Male.—Head longer than wide across the eyes (♂, 17:14; ♀, 19:14); frontal processes fused together into a convex plate, anteriorly not (♂), or slightly (♀) notched, reaching (♂), or projecting beyond the tip (♀) of first antennal joint; preocellar processes slender, slightly raised above the level of frontal plate; ocellar processes strong, dentiform, inclined forwards; proportions of antennal joints are: ♂, 5:8:4:19; ♀, 5:10:6:12, fourth joints of male long, cylindrical, and slightly curved.

Pronotum less long than wide (♂, 23:37; ♀, 25:33); ♂, maximal width across lateral angles; fore-border slightly sinuated; anterior angles not protruding, rectangular; ALA- and ALP-borders forming together a continuous, sinuated line; lateral notch absent; lateral angles forming an upturned, apically rounded lobe; PLA-borders short and sinuated, as long as PLP-borders; posterior angles small, almost rounded, slightly protruding sideways; posterior processes very small, directed sideways (!); posterior border rounded, convex; fore disk scabrous and with an obliterated granulation; hind disk scabrous, finely punctated, but without granulation; carinæ high and slender, divergent, with a high and round tubercle on top. ♀, maximal width across posterior angles; anterior angles small, slightly protruding sideways; ALA-, ALP-, and PLA-borders forming together a straight line, which rises till the lateral angles, then falls till the posterior angles; lateral angles marked only by this breaking of line, and directed upwards; lateral notch absent; posterior angles protruding sideways, angulated; PLP-borders short and sinuated; other characters as in the male.

Scutellum less long than wide (♂, 8:12; ♀, 8:13); disk inflated and at base granulated; median carina washed out; lateral carinæ (rims) obliterated apically.

Hemelytra with exterior border of corium straight (♂), or at the base straight, convex apically, rounded (♀); disk finely punctated, at exterior border with (♂), or without (♀) granulation; membrane brownish, with dispersed, brown, dots; veins partially anastomosed.

Abdomen: ♂, longer than wide (61:55); AL-borders divergent, from connexivum IV more dilated; PE-angles protruding, dentiform; connexiva IV and V forming together laterally upturned lobes (lateral angles); exterior border of connexivum IV, firstly sinuated, then convex, rounded; Pe4 slightly protruding, rounded apically; connexivum V with exterior border at base convex, rounded, then sinuated; Pe5 rectangular, forming a scale with connexivum VI; latter in middle (posterior border) deeply cut out, therefore bilobated; connexivum granulated.

Male, less long than wide (63:68); AL-borders almost straight, slightly convex; PE-angles slightly protruding; lateral angles forming a right, or almost right angle; PL-borders between connexiva IV and V slightly notched; exterior borders of connexiva V and VI in the form of "S," VI posteriorly makes a scale with VII; the latter is in the middle (posterior border) also bilobate; lobes of connexiva VI and VII rounded and upturned. Venter roughly granulated.

Pleuræ: Proleuræ scabrous and granulated; fore-border finely denticulated, teeth growing from above downwards; AEP wide and deep reaching posterior (♂), or lateral (♀) angles; MM-pleuræ sparsely granulated.

Sternum: Mesosternum with cross, the fore branch widened anteriorly and evanescent, not reaching hind border of prosternum.

Legs: Forecoxæ very long as middle femora; fore-femora also long, almost pyriform, at base constricted (♂, 34:11; ♀, 25:11); disk granulated; UBF crenelated.

Coloration: Grayish-brown, variegated with brown and ivory; female testaceous, variegated with brown and ochre-brown; hemelytra brown with a touch of roseate.

Total length: ♂, 6.7; ♀, 7.1 mm; width of pronotum: ♂, 2.2; ♀, 2.0 mm; width of abdomen: ♂, 3.3; ♀, 4.1 mm.

Patria: Central Chile.

Type: ♂, Chile, ex-collection of Signoret; deposited in the Natural History Museum in Vienna.

Examined specimens: 1 ♂ and 1 ♀, Chile, Santiago, El Canelo, and Valparaiso, respectively.

Genus IV. NEOANTHYLLA Kormilev, 1951

Phymata subgen. *Neoanthylla* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 56.

Phymata subgen. *Neoanthylla* KORMILEV, Mis. Est. Pat. Reg. Arg. 23 (1952) 123.

Genotype: *Phymata* (*Neonthylla*) bucki Kormilev, 1951.

This genus is characterized by the middle and hind tibiæ on the dorsal surface convex, rounded, without lateral rims; the forecoxæ very long, as long as the middle femora; fore-femora very long, ovate, on the exterior surface completely flat and smooth, shining, without any granulation or punctation, their upper border smooth, without granulæ or teeth; fore branch of mesosternal cross very long, not raised, granulated, reaching to hind border of prosternum. Rostrum with segment II as stout as I. (Figs. 341 & 345)

93. NEONTHYLLA BUCKI Kormilev, 1951. Plate 16, figs. 338-341.

Phymata (*Neoanthylla*) *bucki* KORMILEV, Rev. Ins. Nac. Inv. Cien. Nat., Bs. As. 2 (1951) 56, fig. 86.

Phymata (*Neoanthylla*) *bucki* KORMILEV, Mis. Est. Pat. Reg. Arg. 23 (1952) 123, fig. 4.

Female.—Elongated and rather depressed; lateral angles of abdomen dilated and upturned, forming lobes.

Head small, longer than wide across eyes (18:15.5); frontal processes small, very short, directed forwards and parallel, apically blunt, reaching middle of first antennal joint; preocellar processes small, granulated, slightly raised above level of frontal plate; ocellar processes very small, dentiform, apically blunt, slightly divergent; granulation rounded, limited only to borders; proportions of antennal joints are: 5:8:10:20, fourth segment elongate fusiform, in male must be stout, very long and cylindrical.

Pronotum elongated and rather depressed, less long than wide (35:40); fore-border widely cut out; anterior angles slightly protruding forwards, blunt; ALA- and ALP-borders with obliterated granulation forming together a slight ondulated line; ALA-borders slightly sinuated anteriorly, then slightly convex; lateral notch very small and shallow; ALP-slightly convex; lateral angles terminated with a small, blunt tooth, slightly inclined sideways; PLA-borders short, slightly sinuated, one and a half times less long than PLP-borders; posterior angles angulated, slightly protruding out and backwards; PLP-borders long, sinuated posteriorly; posterior processes very small, convergent; fore disk inflated, scabrous, and with obliterated granulation; hind disk with big and shallow punctation, but almost without granulation; carinæ stout, divergent backwards, with obliterated, sparse granulation.

Scutellum small (10:15); median carina stout, subcruciform, but somewhat obliterated, granulation also slightly obliterated.

Hemelytra distinctly project beyond hind border of abdomen;

corium very finely punctated, but almost without granulation; veins of corium protruding; membrane brown.

Abdomen longer than wide (81:71); AL-borders long, regularly sinuated from middle of connexivum IV abruptly dilated, convex, rounded; PE-angles very small, tuberculiform, Pe3 slightly bigger, also tuberculiform; Pe4 protruding as an almost right angle, slightly acute, with tip sharply marked; lateral angles upturned, forming a slightly acute angle; connexivum V anteriorly very convex, then slightly sinuated; PL-borders sinuated; posterior border widely rounded; connexiva with fine and sparse granulation; venter without granulation; proportions of connexiva IV and tergum V are: 20:45:20.

Pleuræ: Propleuræ with sparse and somewhat obliterated granulation; fore-border with fine and sparse granulation, but neither crenelated nor denticulated, only at inferior angle provided with a small, blunt, tooth. AEP wide and shallow, reaching lateral angles; MM-pleuræ without granulation, only inferior borders of mesopleuræ granulated.

Sternum: Mesosternal cross with fore branch long, straight, granulated.

Legs: Forecoxæ long, subcylindrical, as long as median femora; fore-femora elongately ovate, (39:15), on disk completely flat, smooth and shiny; their upper borders also smooth, without either granulation or teeth; fore-tibiæ sickle-shaped, exteriorly flat, smooth and shiny; tarsi present, normal; median and hind femora fusiform, smooth, without granulation; median and hind tibiæ on dorsal surface convex, without either rims or granulation.

Coloration: Yellow-brown to ochre-brown; abdomen testaceous; venter yellow; tips of frontal processes, lateral bands of pronotum, fore disk of same, and transversal band of abdomen, brown; connexiva at exterior border bicolor, anteriorly brown, posteriorly testaceous, connexivum IV with two brown and two testaceous stripes.

Female.—Total length, 9.0 mm; width of pronotum, 2.3 mm; width of abdomen, 4.3 mm.

Patria: Brazil (Rio Grande do Sul).

Type: ♀, Brazil, Rio Grande do Sul, Villa Oliva, January 28, 1947 (*Rev. P. Buck*). Deposited in the collection of the author; the males are yet unknown.

Examined specimens: besides the type, 1 ♀, Brazil, S. Catarina, deposited in the Zoologischen Staatssammlungen in Munich.

94. NEOANTHYLLA HORVATHI (Handlirsch), 1898. Plate 16, figs. 342-345.

Phymata horvathi HANDLIRSCH, Verh. Zool. Bot. Ges. Wien 48 (1898) 383.

Female.—Very similar to *Neoanthylla bucki* Kormilev, the main differences are: head more granulated; proportions of antennal joints are: 5:9:11:22; pronotum relatively wider; lateral angles protruding as longer and acute teeth, inclined sideways; PLA-borders relatively shorter, half as long as PLP-borders, and more sinuated; posterior angles dentiform, acute protruding sideways; posterior processes more robust; punctation of hind disk very fine, deeper, not ocellated as in *N. bucki*; granulation completely absent; corium with veins very fine, not protruding; granulation of the corium absent; hemelytra shorter, not reaching hind border of abdomen. Abdomen relatively wider; PE-angles in form of blunt teeth, not tuberculiform; Pe4 forming a more acute and more protruding angle; exterior borders of connexivum IV more sinuated anteriorly, more convex posteriorly; exterior borders of connexiva less convex anteriorly; propleuræ on disk more granulated; fore-border crenelated and inferiorly with three or four teeth. Coloration paler: Pale yellow with a touch of orange; abdomen testaceous; exterior borders of connexiva concolor, only exterior border of connexiva IV bicolor, testaceous and whitish. All other characters as in *N. bucki* Kormilev.

Biometrical measures: Head, 20:16.5; pronotum, 34:44; scutellum, 10.5:15.5; abdomen, 81:74; fore-femora, 42:16; proportions of connexiva IV and tergum V are: 23:40:23.

Female.—Total length, 9.0 mm; width of pronotum, 2.6 mm; width of abdomen, 4.4 mm.

Patria: Brazil (Minas Gerais).

Type: ♀, Brazil, Minas Gerais—1897, ex-coll. of Fruhstorfer; deposited in the Hungarian National Museum, Budapest; the males are yet unknown.

I am greatly indebted to Dr. Eva Halaszfy, keeper of the Department of Zoology of the Hungarian National Museum, who allowed me to examine the Handlirsch type of this striking species.

NOTE: Late in 1956, when this manuscript was finished, I received, an additional material of Phymatidæ from U. S. National Museum in

Washington. As it could not be intercalated in the manuscript without bigger changes of the latter, it was published as a small separate paper in the Revista Brasileira de Biologia [17 (1957) 123–138] named "Notes on American Phymatidæ (Hemiptera)."

This paper contains six new species and four new subspecies of the genus *Phymata* Latreille, all belonging to the subgenus *Phymata* Latr. s. str. The species and subspecies are:

1. *Phymata rhynocerata* Kormilev, Rev. Bras. Biol. 17 (1957) 124, figs. 1–3. (Mexico.) It runs in the key to *P. carvalhoi* Kormilev (1950), but differs from it by more pointed and more raised frontal trunk of the head, by more produced and raised lateral angles of the pronotum and abdomen, etc.

2. *Phymata maculata* Kormilev, Idem 17 (1957) 127, figs. 4–5, (U. S. A., Utah). Allied to *P. vicina* Handlirsch (1898), but much smaller, more depressed, lateral notch of the pronotum almost absent, etc.

3. *Phymata pallida* Kormilev, Idem 17 (1957) 128, figs. 6–7. (U. S. A., Arizona). Allied to *P. maculata* and *P. vicina*, differing from the first by smaller size, shorter fourth antennal joint, more dilated abdomen, striking cream-yellow color of the body, etc.

4. *Phymata luteo-marginata* Kormilev, Idem 17 (1957) 130, figs. 8–9. (U. S. A. Nevada). It runs in the key to *P. bipunctata* Kormilev (1951), but is not closely allied to the last; it makes a transition to the North-American species with elongate body (*P. pacifica* Evans, *P. salicis* Cockerell, etc.), but is not closely allied to them either. It has a striking coloration: testaceous and bright yellow.

5. *Phymata drakei* Kormilev, Idem 17 (1957) 131, figs. 10–12. (Colombia). It is allied to *P. malaisei* sp. nov. to which it runs in the key, but differs from it by curious conical processes at the base of the pronotal carinæ.

6. *Phymata saileri* Kormilev, Idem 17 (1957) 133, figs. 13–14 (U. S. A., Arizona). In the key it runs to *P. malaisei* sp. nov., but it is intermediate between the species with the linear and the cruciform scutellar carina. It is also allied to *P. guerini* Leth. and Sev. (1896) and *P. breviceps* Stål differing from the first by the spiculoid granulation of the fore lobe of the pronotum, and from the second by setigerous granulation of the body.

The subspecies are: *Phymata simulans trinidadensis* Kormilev, Idem 17 (1957) 125 (Trinidad); *Phymata vicina parvula* Kormilev, Idem 17 (1957) 126 (U. S. A., Texas); *Phymata granulosa texasana* Kormilev, Idem 17 (1957) 134 (U. S. A., Texas); and *Phymata americana obscura* Kormilev, Idem 17 (1957) 136 (U. S. A., Idaho).

FURTHER NOTE: In 1958, when this paper was sent for publication, Carayon, Usinger, and Wygodzinsky, published jointly their "Notes on the higher classification of the Reduviidæ, with the description of a new tribe of the Phymatinæ" [Rev. Zool. Bot. Afr. (3–4) 68: 256–281] in which they proposed the reduction of the family Phymatidæ to a subfamily, placing it under the family Reduviidæ based on a new tribe Themonocorini, described in the same paper, representing a link between Reduviidæ and Phymatidæ. With all respect to the authors, I cannot agree with the reduction. The reasons for retaining Phymatidæ as a family will be explained in a separate paper; I will only state here that I agree with the views of China and Miller expressed in their recent paper, "Check-list and keys to the families and subfamilies of the Hemiptera-Heteroptera" [Bull. Brit. Mus. N. H. Ent. 8 (1959) 1–45] that "*Themonocoris* is a primitive Phymatid, and should not be allowed to disrupt the very concise group of Phymatidæ," but should come as a fourth subfamily, Themonocorinæ under Phymatidæ.

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ILLUSTRATIONS

PLATE 1

FIG. 1. *Phymata angulata* Uhler, ♀, dorsal aspect.
2. *Phymata* sp., dorsum of abdomen, ♂.
3. *Phymata* sp., venter, ♂.
4. *Phymata* sp., tip of abdomen, dorsal aspect, ♀.
5. *Phymata* sp., tip of abdomen, ventral aspect, ♀.
6. *Phymata* sp., sternum.

PLATE 2

FIG. 7. *Phymata* sp., hind wing.
8. *Phymata* sp., male genitalia, (according to N. T. Davis).
9. *Phymata* sp., phallus, (according to N. T. Davis).
10. *Phymata* sp., female genitalia, (according to N. T. Davis).
11. *Phymata chilensis cordobensis* Korm., phallus, lateral aspect.
12. *Phymata chilensis cordobensis* paramere (left).
13. *Phymata (Neophymata) bosqui* Korm., phallus lateral aspect.
14. *Phymata (Neophymata) bosqui* Korm., phallus ventral aspect.
15. *Phymata (Neophymata) bosqui* Korm., paramere (left).
16. *Phymata (Euryphymata) superba* sp. nov., phallus, lateral aspect.
17. *Phymata (Euryphymata) superba* sp. nov., phallus seen from behind.
18. *Phymata (Euryphymata) superba* sp. nov., phallus seen from face.
19. *Phymata (Euryphymata) superba* sp. nov., paramere (left), lateral aspect.
20. *Phymata (Euryphymata) superba* sp. nov., paramere (left), seen from behind.

PLATE 3

FIG. 21. *Phymata (Phymatispa) fortificata paranensis* Korm. phallus, lateral aspect.
22. *Phymata (Phymatispa) fortificata paranensis* Korm., phallus, seen from behind.
23. *Phymata (Phymatispa) fortificata paranensis* Korm., paramere (left).
24. *Anthylla nervoso-punctata* Sign., phallus, lateral aspect.
25. *Anthylla nervoso-punctata* Sign., paramere (left).
26. *Paraphymata saileri* gen. nov., sp. nov., phallus, lateral aspect.
27. *Paraphymata saileri* gen. nov., sp. nov., paramere (left).
28. *Phymata distanti* Handl., pronotum, (according to Handlirsch).
29. *Phymata distanti* Handl., connexivum (according to Handlirsch).
30. *Phymata producta* Hoberlandt, head, pronotum and scutellum, (according to Hoberlandt).
31. *Phymata producta* Hoberlandt, connexivum, (according to Hoberlandt).
32. *Phymata oxycephala* Dudich, ♀, (type), head and pronotum.
33. *Phymata oxycephala* Dudich, (type), connexivum.

34. *Phymata mansosotoi* Kormilev, ♂, (type), head and pronotum.
35. *Phymata mansosotoi* Kormilev, (type), propleuron.
36. *Phymata mansosotoi* Kormilev, (type), connexivum.
37. *Phymata riojana* Pennington, ♂, head and pronotum.
38. *Phymata riojana* Pennington, connexivum.

PLATE 4

FIG. 39. *Phymata carvalhoi* Kormilev, ♀, (type), head and pronotum.
40. *Phymata carvalhoi* Kormilev, (type), connexivum.
41. *Phymata beieri* sp. nov. ♀, (type), head and pronotum.
42. *Phymata beieri* sp. nov. (type), head and propleuron.
43. *Phymata beieri* sp. nov. (type), connexivum.
44. *Phymata sâopauloensis* Hoberlandt, ♀, head and pronotum, (according to Hoberlandt).
45. *Phymata sâopauloensis* Hoberlandt, ♀, connexivum, (according to Hoberlandt).
46. *Phymata scabrosa* Handlirsch, ♂, pronotum.
47. *Phymata scabrosa* Handlirsch, connexivum.
48. *Phymata peruensis* Melin, ♂, (type), head and pronotum.
49. *Phymata peruensis* Melin, (type), connexivum.
50. *Phymata acuta* Stål, ♂, (type), head and pronotum.
51. *Phymata acuta* Stål, ♂ (type), connexivum.
52. *Phymata longiceps* Stål, ♀, (type), head and pronotum.
53. *Phymata longiceps* Stål, (type), connexivum.
54. *Phymata roqueensis* Melin, ♂, (type), head and pronotum.
55. *Phymata roqueensis* Melin, (type), connexivum.
56. *Phymata roqueensis* halszfyi ssp. nov., ♂, (type), head and pronotum.
57. *Phymata roqueensis halszfyi* ssp. nov., (type), connexivum.
58. *Phymata vianai* Kormilev, ♂, (type), head and pronotum.
59. *Phymata vianai* Kormilev, (type), connexivum.

PLATE 5

FIG. 60. *Phymata simulans* Stål, ♂, (type), head and pronotum.
61. *Phymata simulans* Stål, (type), connexivum.
62. *Phymata simulans explanata* ssp. nov., ♂, (type), pronotum.
63. *Phymata simulans explanata* ssp. nov., (type), connexivum.
64. *Phymata simulans surinamensis* ssp. nov., ♂, (type), head and pronotum.
65. *Phymata simulans surinamensis* ssp. nov., (type), propleuron.
66. *Phymata simulans surinamensis* ssp. nov., (type), connexivum.
67. *Phymata simulans recifensis* ssp. nov., ♂, (type), pronotum.
68. *Phymata simulans recifensis* ssp. nov., (type), propleuron.
69. *Phymata simulans recifensis* ssp. nov., (type), connexivum.
70. *Phymata lindigiana* Melin, ♂, (type), head and pronotum.
71. *Phymata lindigiana* Melin, (type), connexivum.
72. *Phymata ampliata* sp. nov., ♂, (type), pronotum.
73. *Phymata ampliata* sp. nov., (type), propleuron.
74. *Phymata ampliata* sp. nov., (type), connexivum.
75. *Phymata centralis* sp. nov., ♀, (type), head and pronotum.

76. *Phymata centralis* sp. nov., (type), propleuron.
77. *Phymata centralis* sp. nov., (type), connexivum.
78. *Phymata husseyi* Kormilev, ♂, (type), head and pronotum.
79. *Phymata husseyi* Kormilev, (type), connexivum.
80. *Phymata swederi* Stål, ♂, (type), head and pronotum.
81. *Phymata swederi* Stål, (type), antenna.
82. *Phymata swederi* Stål, (type), connexivum.
83. *Phymata integra* Westwood, ♀, pronotum.
84. *Phymata integra* Westwood, propleuron.
85. *Phymata integra* Westwood, connexivum.

PLATE 6

FIG. 86. *Phymata reticulata* Handlirsch, ♂, connexivum IV, ventral aspect, according to Handlirsch).
87. *Phymata reticulata* Handlirsch, antenna, (according to Handlirsch).
88. *Phymata annulipes* Stål, ♀, pronotum.
89. *Phymata annulipes* Stål, propleuron.
90. *Phymata annulipes* Stål, femor (right).
91. *Phymata annulipes* Stål, connexivum, dorsal aspect.
92. *Phymata annulipes* Stål, connexiva III to IV, ventral aspect.
93. *Phymata venezuelana* Kormilev, ♂, (type), pronotum.
94. *Phymata venezuelana* Kormilev, (type), propleuron.
95. *Phymata venezuelana* Kormilev, (type), connexivum, dorsal aspect.
96. *Phymata venezuelana* Kormilev, (type), connexiva III to V. ventral aspect.
97. *Phymata laciniata* Handlirsch, ♂, connexivum IV, ventral aspect, (according to Handlirsch).
98. *Phymata laciniata* Handlirsch, antenna, (according to Handlirsch).
99. *Phymata nouahlieri* Handlirsch, ♂, pronotum.
100. *Phymata nouahlieri* Handlirsch, propleuron.
101. *Phymata nouahlieri* Handlirsch, connexivum, dorsal aspect.
102. *Phymata nouahlieri* Handlirsch, connexiva III to V. ventral aspect.
103. *Phymata marginata* (F.), ♂, pronotum.
104. *Phymata marginata* (F.), propleuron.
105. *Phymata marginata* (F.), connexivum, dorsal aspect.
106. *Phymata marginata* (F.), connexiva III to V, ventral aspect.
107. *Phymata emarginata* Guérin, ♂, pronotum.
108. *Phymata emarginta* Guérin, propleuron.
109. *Phymata emarginata* Guérin, connexivum, ventral aspect.
110. *Phymata albopicta* Handlirsch, ♀, pronotum.
111. *Phymata albopicta* Handlirsch, propleuron.
112. *Phymata albopicta* Handlirsch, connexivum, dorsal aspect.
113. *Phymata albopicta* Handlirsch, connexivum IV, ventral aspect.
114. *Phymata acutangula* Guérin, ♂, pronotum.
115. *Phymata acutangula* Guérin, propleuron.
116. *Phymata acutangula* Guérin, connexivum.

PLATE 7

FIG. 117. *Phymata bimini* Barber, ♂, head and pronotum, (according to Barber).
118. *Phymata bimini* Barber, connexivum, (according to Barber).
119. *Phymata angulata* Uhler, ♀, propleuron.
120. *Phymata vicina* Handlirsch, ♀, pronotum.
121. *Phymata vicina* Handlirsch, propleuron.
122. *Phymata vicina* Handlirsch, ♂, connexivum.
123. *Phymata vicina* Handlirsch, ♀, connexivum.
124. *Phymata crassipes* (F.), ♂, pronotum.
125. *Phymata crassipes* (F.), ♂, antenna.
126. *Phymata crassipes* (F.), connexivum.
127. *Phymata monstrosa* (F.), ♂, pronotum.
128. *Phymata monstrosa* (F.), ♂, antenna.
129. *Phymata monstrosa* (F.), connexivum.
130. *Phymata bipunctata* Kormilev, ♀, (type), dorsal aspect.
131. *Phymata interjecta* Dudich, ♀, (type), pronotum.
132. *Phymata interjecta* Dudich, (type), propleuron.
133. *Phymata interjecta* Dudich, (type), connexivum.
134. *Phymata malaisei* sp. nov., ♀, (type), head and pronotum.
135. *Phymata malaisei* sp. nov., (type), propleuron.
136. *Phymata malaisei* sp. nov., (type), connexivum.
137. *Phymata aberrans* Dudich, ♂, (type), propleuron.
138. *Phymata aberrans* Dudich, (type), connexivum.
139. *Phymata erosa* (L.), ♂, (type), pronotum.
140. *Phymata erosa* (L.), (type), propleuron.
141. *Phymata erosa* (L.), (type), connexivum.
142. *Phymata erosa huebneri* Melin, ♂, (type), pronotum.
143. *Phymata erosa huebneri* Melin, (type), propleuron.
144. *Phymata erosa huebneri* Melin, (type), connexivum.
145. *Phymata subarmata* Kormilev, ♀, (type), propleuron.

PLATE 8

FIG. 146. *Phymata subarmata* Kormilev, ♀, (type), pronotum.
147. *Phymata subarmata* Kormilev, (type), connexivum.
148. *Phymata armata* Handlirsch, ♂, left half of the pronotum, seen at three-fourths.
149. *Phymata armata* Handlirsch, propleuron.
150. *Phymata armata* Handlirsch, connexivum.
151. *Phymata parilis* Dudich, ♂, propleuron.
152. *Phymata parilis* Dudich, connexivum.
153. *Phymata luxa* Evans, ♀, pronotum.
154. *Phymata luxa* Evans, propleuron.
155. *Phymata luxa* Evans, connexivum.
156. *Phymata maculipennis* Handlirsch, ♀, (lectotype), head and pronotum.
157. *Phymata maculipennis* Handlirsch, (lectotype), propleuron.
158. *Phymata maculipennis* Handlirsch, (lectotype), connexivum.
159. *Phymata severini* Handlirsch, ♂, pronotum.

160. *Phymata severini* Handlirsch, propleuron.
161. *Phymata severini* Handlirsch, connexivum.
162. *Phymata severini dyeri* ssp. nov., ♂, (type), propleuron.
163. *Phymata severini dyeri* ssp. nov., ♀, (type), propleuron.
164. *Phymata severini dyeri* ssp. nov., ♂, (type), connexivum.
165. *Phymata foersteri* Kormilev, ♂, (type), pronotum.
166. *Phymata foersteri* Kormilev, (type), propleuron.
167. *Phymata foersteri* Kormilev, (type), connexivum.

169. *Phymata puchra* Dudich, (type), connexivum.
170. *Phymata mayri* sp. nov., ♂, (type), propleuron.
171. *Phymata mayri* sp. nov., (type), connexivum.
172. *Phymata pennsylvanica* Handlirsch, ♂, propleuron.

PLATE 9

FIG. 173. *Phymata pennsylvanica* Handlirsch, ♂, pronotum.
174. *Phymata pennsylvanica* Handlirsch, connexivum.
175. *Phymata rossi* Evans, ♂, pronotum.
176. *Phymata rossi* Evans, propleuron.
177. *Phymata rossi* Evans, ♂, connexivum.
178. *Phymata rossi* Evans, ♀, connexivum.
179. *Phymata granulosa* Handlirsch, ♂, (lectotype), right half of pronotum, seen at three-fourths.
180. *Phymata granulosa* Handlirsch, (lectotype), propleuron.
181. *Phymata granulosa* Handlirsch, ♂, (lectotype), connexivum.
182. *Phymata granulosa* Handlirsch, ♀, connexivum.
183. *Phymata granulosa* evansi ssp. nov., ♂, (type), propleuron.
184. *Phymata granulosa evansi* ssp. nov., (type), connexivum.
185. *Phymata granulosa chiriquiensis* Melin, ♂, (type), pronotum.
186. *Phymata granulosa chiriquiensis* Melin, (type), propleuron.
187. *Phymata granulosa chiriquiensis* Melin, (type), connexivum.
188. *Phymata granulosa chiriquiensis* Melin, (type), right femur.
189. *Phymata breviceps* Stål, ♀ (type), pronotum.
190. *Phymata breviceps* Stål, (type), connexivum.
191. *Phymata delpontei* Kormilev, ♂, (type), propleuron.
192. *Phymata delpontei* Kormilev, ♀, (type), propleuron.
193. *Phymata delpontei* Kormeliv, ♂, (type), connexivum.
194. *Phymata delpontei* Kormilev, ♀, connexivum.
195. *Phymata guérini* Lethierry and Severin, ♂, pronotum.
196. *Phymata guérini* Lethierry and Severin, propleuron.
197. *Phymata guérini* Lethierry and Severin, connexivum.

PLATE 10

FIG. 198. *Phymata fasciata* (Gray), ♂, (neotype), pronotum.
199. *Phymata fasciata* (Gray), (neotype), propleuron.
200. *Phymata fasciata* (Gray), ♂, (neotype), connexivum.
201. *Phymata fasciata* (Gray), ♀, connexivum.
202. *Phymata fasciata mexicana* Melin, ♂, (type), pronotum.
203. *Phymata fasciata mexicana* Melin, (type), propleuron.
204. *Phymata fasciata mexicana* Melin, (type), connexivum.
205. *Phymata fasciata mystica* Evans, ♂, pronotum.
206. *Phymata fasciata mystica* Evans, propleuron.

207. *Phymata mystica* Evans, connexivum.
208. *Phymata fasciata panamensis* ssp. nov., ♂, (type), pronotum.
209. *Phymata fasciata panamensis* ssp. nov., (type), propleuron.
210. *Phymata fasciata panamensis* ssp. nov., (type), connexivum.
211. *Phymata americana* Melin, ♂, (type), pronotum.
212. *Phymata americana* Melin, (type), connexivum.
213. *Phymata atra* Melin, ♂, (type), pronotum.
214. *Phymata atra* Melin, (type), propleuron.
215. *Phymata atra* Melin, (type), connexivum.
216. *Phymata borica* Evans, ♂, pronotum.
217. *Phymata borica* Evans, propleuron.
218. *Phymata borica* Evans, connexivum.

PLATE 11

FIG. 219. *Phymata boliviana* Dudich, ♂, (type), pronotum.
220. *Phymata boliviana* Dudich, (type), propleuron.
221. *Phymata boliviana* Dudich, ♂, (type), connexivum.
222. *Phymata boliviana* Dudich, ♀, (type), connexivum.
223. *Phymata salicis* Cockerell, ♂, pronotum.
224. *Phymata salicis* Cockerell, propleuron.
225. *Phymata salicis* Cockerell, ♂, connexivum.
226. *Phymata salicis* Cockerell, ♀, connexivum.
227. *Phymata debilis* Handlirsch, ♂, pronotum.
228. *Phymata debilis* Handlirsch, propleuron.
229. *Phymata debilis* Handlirsch, ♂, connexivum.
230. *Phymata debilis* Handlirsch, ♀, connexivum.
231. *Phymata bogotana* Handlirsch, ♂, (lectotype), pronotum.
232. *Phymata bogotana* Handlirsch, (lectotype), propleuron.
233. *Phymata bogotana* Handlirsch, ♂, (lectotype), connexivum.
234. *Phymata bogotana* Handlirsch, ♀, connexivum.
235. *Phymata pacifica* Evans, ♂, pronotum.
236. *Phymata pacifica* Evans, propleuron.
237. *Phymata pacifica* Evans, ♂, connexivum.
238. *Phymata pacifica* Evans, ♀, connexivum.
239. *Phymata pacifica stanfordi* Evans, ♂, propleuron.
240. *Phymata pacifica stanfordi* Evans, connexivum.
241. *Phymata pacifica hainesi* ssp. nov., ♂, (type), propleuron.
242. *Phymata pacifica hainesi* ssp. nov. ♂, (type), connexivum.
243. *Phymata pacifica hainesi* ssp. nov., ♀, connexivum.
244. *Phymata parva* Handlirsch, ♂, (lectotype), pronotum.
245. *Phymata parva* Handlirsch, (lectotype), propleuron.
246. *Phymata parva* Handlirsch, (lectotype), connexivum.

PLATE 12

FIG. 247. *Phymata birabeni* Kormilev, ♀, (type), pronotum.
248. *Phymata birabeni* Kormilev, ♀, (type), connexivum.
249. *Phymata carioca* Kormilev, ♂, (type), pronotum.
250. *Phymata conspicua* Scott, ♀, pronotum.
251. *Phymata conspicua* Scott, propleuron.
252. *Phymata conspicua* Scott, connexivum.

253. *Phymata colombiana* sp. nov., ♀, (type), pronotum.
254. *Phymata colombiana* sp. nov., (type), propleuron.
255. *Phymata colombiana* sp. nov., (type), connexivum.
256. *Phymata haywardi* Kormilev, ♂, (type), pronotum.
257. *Phymata haywardi* Kormilev, (type), propleuron.
258. *Phymata haywardi* Kormilev, ♂, (type), connexivum.
259. *Phymata haywardi* Kormilev, ♀, connexivum.
260. *Phymata inconspicua* sp. nov., ♂, (type), pronotum.
261. *Phymata inconspicua* sp. nov., (type), connexivum.
262. *Phymata minuta* sp nov., ♂, (type), pronotum.
263. *Phymata minuta* sp. nov., (type), propleuron.
264. *Phymata minuta* sp. nov., (type), connexivum.
265. *Phymata cinnamomea* Handlirsch, ♂, (lectotype), pronotum.
266. *Phymata cinnamomea* Handlirsch, (lectotype), propleuron.
267. *Phymata cinnamomea* Handlirsch, ♂, (lectotype), connexivum.
268. *Phymata cinnamomea* Handlirsch, ♀, connexivum.
269. *Phymata barberi* sp. nov., from Panama, ♂, pronotum.
270. *Phymata barberi* sp. nov., from Panama, propleuron.
271. *Phymata barberi* sp. nov., from Panama, connexivum.

PLATE 13

FIG. 272. *Phymata barberi* sp. nov., ♂, (type), pronotum.
273. *Phymata barberi* sp. nov., (type), propleuron.
274. *Phymata barberi* sp. nov., ♂, (type), connexivum.
275. *Phymata barberi* sp. nov., ♀, connexivum.
276. *Phymata andina* Melin, ♂, (type), pronotum.
277. *Phymata andina* Melin, ♂, (type), connexivum.
278. *Phymata andina* Melin, ♀, connexivum.
279. *Phymata carneipes* Mayr, ♂, (type), pronotum.
280. *Phymata carneipes* Mayr, (type), propleuron.
281. *Phymata carneipes* Mayr, ♂, (type), connexivum.
282. *Phymata carneipes* Mayr, ♀, connexivum.
283. *Phymata praestans* Handlirsch, ♂, pronotum.
284. *Phymata praestans* Handlirsch, propleuron.
285. *Phymata praestans* Handlirsch, ♂, connexivum.
286. *Phymata praestans* Handlirsch, ♀, connexivum.
287. *Phymata communis* Handlirsch, ♂, (lectotype), pronotum.
288. *Phymata communis* Handlirsch, (lectotype), propleuron.
289. *Phymata communis* Handlirsch, ♂ (lectotype), connexivum.
290. *Phymata communis* Handlirsch, ♀, connexivum.

PLATE 14

FIG. 291. *Phymata communis* Handlirsch, ♂, connexivum (extreme from Corrientes).
292. *Phymata communis* Handlirsch, ♀, connexivum (extreme from Corrientes).
293. *Phymata bergi* Kormilev, ♀, (type), propleuron.
294. *Phymata bergi* Kormilev, (type), connexivum.
295. *Phymata chilensis monrosi* Kormilev, ♂, (type), pronotum.
296. *Phymata chilensis monrosi* Kormilev, (type), propleuron.

297. *Phymata chilensis monrosi* Kormilev, ♂, (type), connexivum.
298. *Phymata chilensis monrosi* Kormilev, ♀, (type), connexivum.
299. *Phymata chilensis* Handlirsch, ♂, propleuron.
300. *Phymata chilensis* Handlirsch, ♂, connexivum.
301. *Phymata chilensis* Handlirsch, ♀, connexivum.
302. *Phymata chilensis cordobensis* Kormilev, ♂, (type), propleuron.
303. *Phymata chilensis cordobensis* Kormilev, ♂, (type), connexivum.
304. *Phymata chilensis cordobensis* Kormilev, ♀, connexivum.
305. *Phymata chilensis pampeana* Kormilev, ♂, (type), propleuron.
306. *Phymata chilensis pampeana* Kormilev, ♂, (type), connexivum.
307. *Phymata chilensis pampeana* Kormilev, ♀, connexivum.
308. *Phymata chilensis uruguayensis* Kormilev, ♂, (type), propleuron.
309. *Phymata chilensis uruguayensis* Kormilev, ♂, (type), connexivum.
310. *Phymata chilensis uruguayensis* Kormilev, ♀, connexivum.
311. *Phymata chilensis brasiliensis* ssp. nov., ♂, (type), pronotum.
312. *Phymata chilensis brasiliensis* ssp. nov., (type), propleuron.
313. *Phymata chilensis brasiliensis* ssp. nov., (type), connexivum.

PLATE 15

FIG. 314. *Phymata* (*Neophymata*) *bosqui* Kormilev, ♂, (type), right half of the pronotum, seen at three-fourths.
315. *Phymata* (*Neophymata*) *bosqui* Kormilev, (type), antenna.
316. *Phymata* (*Neophymata*) *bosqui* Kormilev, (type), propleuron.
317. *Phymata* (*Neophymata*) *bosqui* Kormilev, (type), connexivum.
318. *Phymata* (*Phymatispa*), *fortificata* H. S., ♂, pronotum.
319. *Phymata* (*Phymatispa*) *fortificata* H. S., ♂, connexivum.
320. *Phymata* (*Phymatispa*) *fortificata* H. S., ♀, connexivum.
321. *Phymata* (*Phymatispa*) *fortificata patagonica* Kormilev, ♂ (type), right of the pronotum.
322. *Phymata* (*Phymatispa*) *fortificata patagonica* Kormilev, ♂, connexivum.
323. *Phymata* (*Phymatispa*) *fortificata sanjuanensis* Kormilev, ♂, (type), right half of the pronotum.
324. *Phymata* (*Phymatispa*) *fortificata sanjuanensis* Kormilev, ♂, connexivum.
325. *Phymata* (*Phymatispa*) *fortificata montana* Kormilev, ♂, (type), propleuron.
326. *Phymata* (*Phymatispa*) *fortificata montana* Kormilev, (type), connexivum.
327. *Phymata* (*Phymatispa*) *fortificata argentina* Pennington, ♂, right half of the pronotum.

328. *Phymata* (*Phymatispa*) *fortificata argentina* Pennington, propleuron.

329. *Phymata* (*Phymatispa*) *fortificata argentina* Pennington, connexivum.

330. *Phymata* (*Phymatispa*) *fortificata tessera* Hoberlandt, ♂, right half of the pronotum.

331. *Phymata* (*Phymatispa*) *fortificata tessera* Hoberlandt, propleuron.

332. *Phymata* (*Phymatispa*) *fortificata tessera* Hoberlandt, connexivum.

PLATE 16

FIG. 333. *Phymata* (*Phymatispa*) *paradoxa* Kormilev, ♂, (type), pronotum.

334. *Phymata* (*Phymatispa*) *paradoxa* Kormilev, (type), propleuron.

335. *Phymata* (*Phymatispa*) *paradoxa* Kormilev, (type), antenna.

336. *Phymata* (*Phymatispa*) *paradoxa* Kormilev, ♂, (type), connexivum.

337. *Phymata* (*Phymatispa*) *paradoxa* Kormilev, ♀, connexivum.

338. *Neoanthylla bucki* Kormilev, ♀, (type), pronotum.

339. *Neoanthylla bucki* Kormilev, (type), propleuron.

340. *Neoanthylla bucki* Kormilev, (type), connexivum.

341. *Neoanthylla bucki* Kormilev, (type), left femur and tibia.

342. *Neoantylla horvathi* (Handlirsch), ♀, (type), pronotum.

343. *Neoantylla horvathi* (Handlirsch), (type), propleuron.

344. *Neoanthylla horvathi* (Handlirsch), (type), connexivum.

345. *Neoanthylla horvathi* (Handlirsch), (type), left femur and tibia.

346. *Anthylla nervoso-punctata* (Signoret), ♂, pronotum.

347. *Anthylla nervoso-punctata* (Signoret), ♀, right half of the pronotum.

348. *Anthylla nervoso-punctata* (Signoret), ♂, propleuron.

349. *Anthylla nervoso-punctata* (Signoret), ♂, antenna.

350. *Anthylla nervoso-punctata* (Signoret), ♂, connexivum.

351. *Anthylla nervoso-punctata* (Signoret), ♀, connexivum.

352. *Paraphymata saileri* gen. nov., sp. nov., ♂, (type), head, ventral aspect.

353. *Paraphymata saileri* gen. nov., sp. nov., (type), head, propleuron, antenna and femur with tibia.

354. *Paraphymata saileri* gen. nov., sp. nov., (type), head and pronotum, frontal aspect.

PLATE 17

FIG. 355. *Paraphymata saileri* sp. nov., gen. nov., ♂, (type), body, dorsal aspect.

356. *Phymata (Euryphymata) superba* sp. nov., ♂, (type), body, dorsal aspect.

PLATE 18

FIG. 357. *Phymata arctostaphylæ* Van Duzee, ♂, pronotum.

358. *Phymata arctostaphylæ* Van Duzee, connexivum.

359. *Phymata americana metcalfi* Evans, ♂, pronotum.

360. *Phymata americana metcalfi* Evans, connexivum.

361. *Phymata subinermis* Horvath, ♂, pronotum.

362. *Phymata subinermis* Horvath, connexivum.

363. *Phymata rhynocerata* Kormilev, ♀, head and pronotum, dorsal aspect.

364. *Phymata rhynocerata* Kormilev, head and pronotum, lateral aspect.

365. *Phymata maculata* Kormilev, ♂, head and pronotum.

366. *Phymata pallida* Kormilev, ♂, head and pronotum.

367. *Phymata luteomarginata* Kormilev, ♂, head and pronotum.

368. *Phymata drakei* Kormilev, ♀, head and pronotum.

369. *Phymata drakei* Kormilev, propleuron.

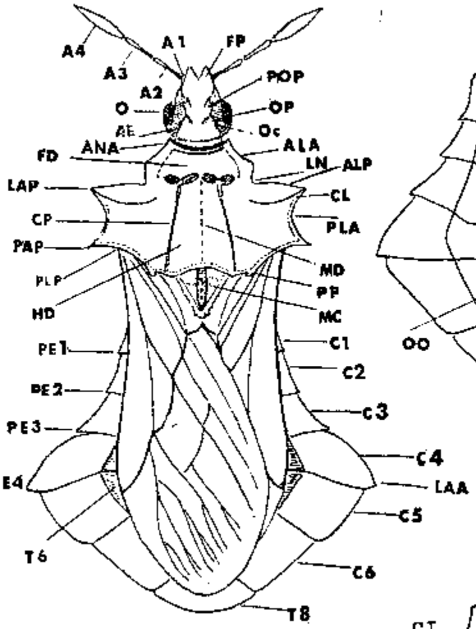
PLATE 19

FIG. 370. *Phymata crassipes* (F.), male genitalia, left half (according to Carayon).

371. *Phymata crassipes* (F.), female genitalia (according to Carayon).

372. *Phymata crassipes* (F.), metathoracal scent-glands (according to Carayon).

373. *Phymata crassipes* (F.), glands of Brindley (according to Carayon).



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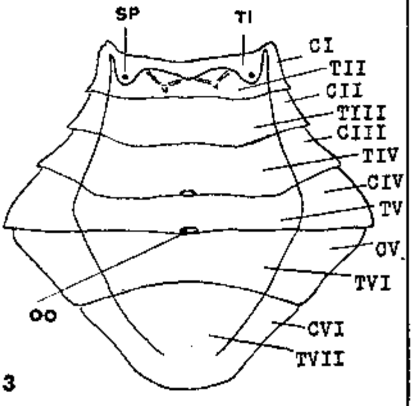

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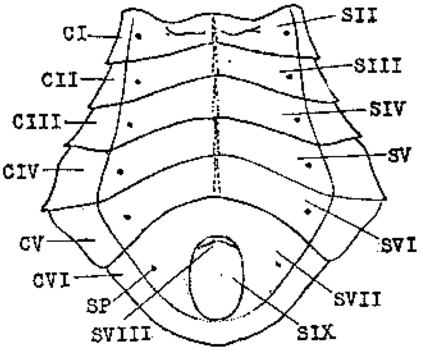

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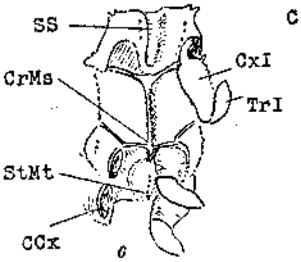

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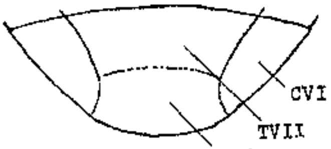

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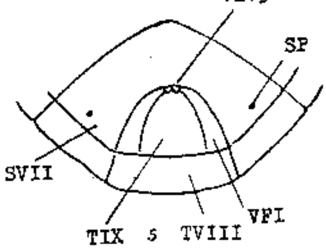

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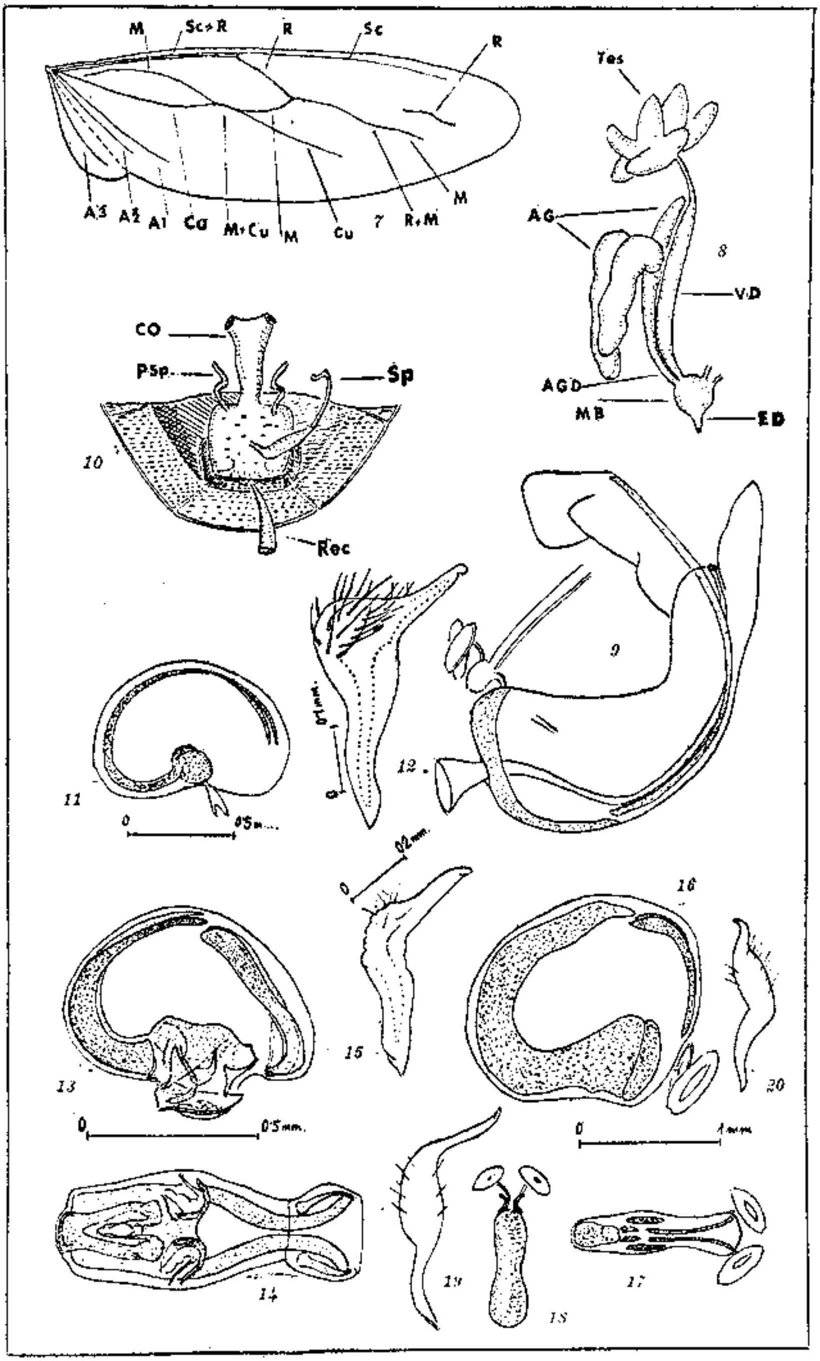
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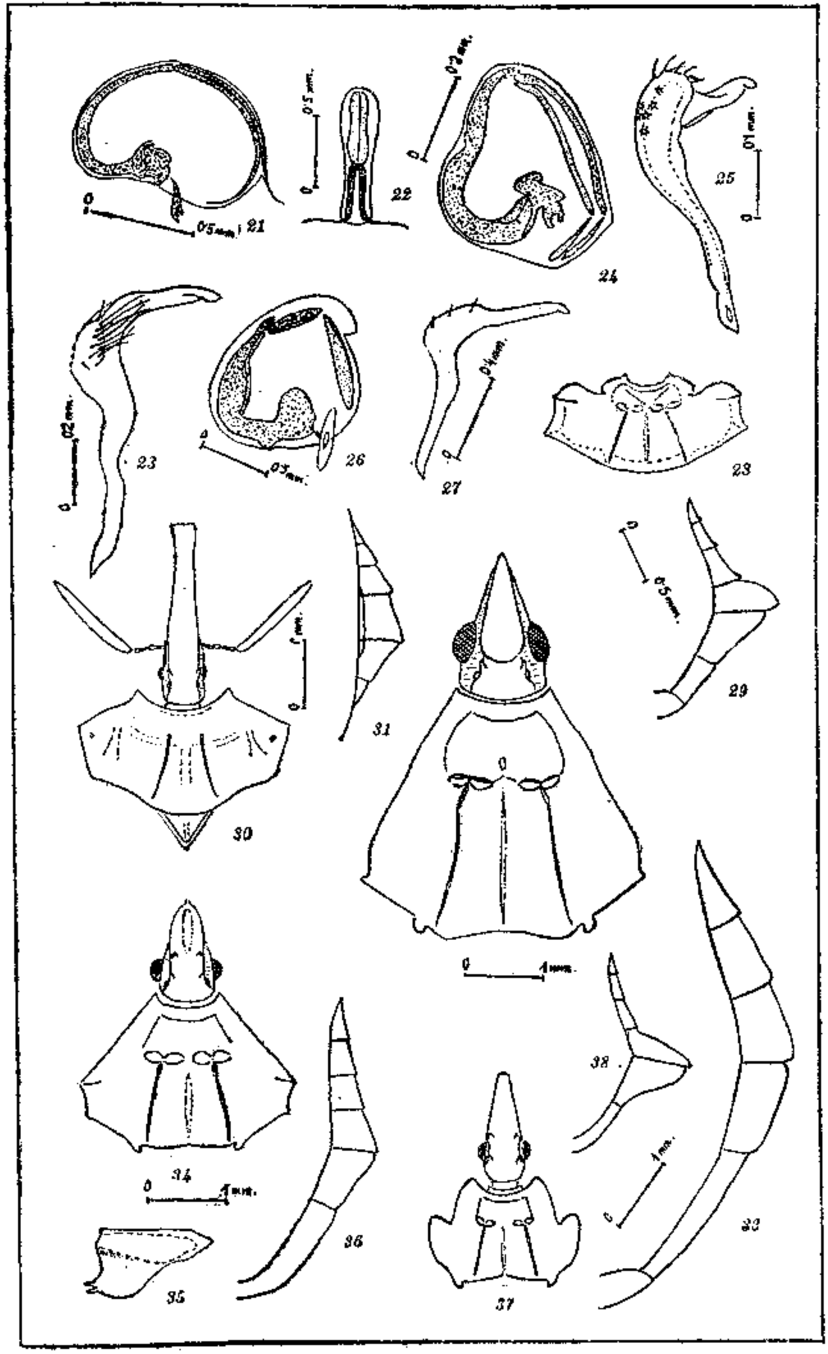
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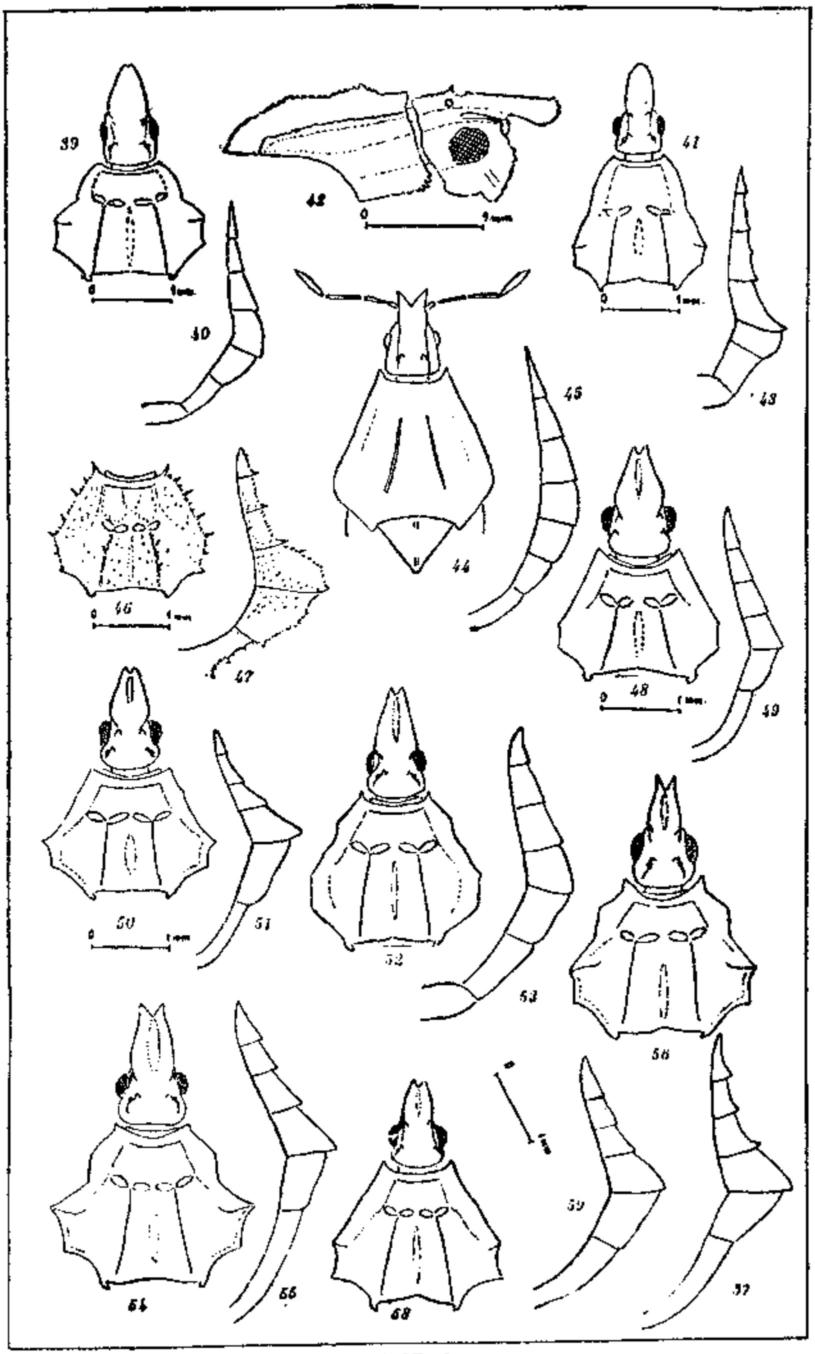
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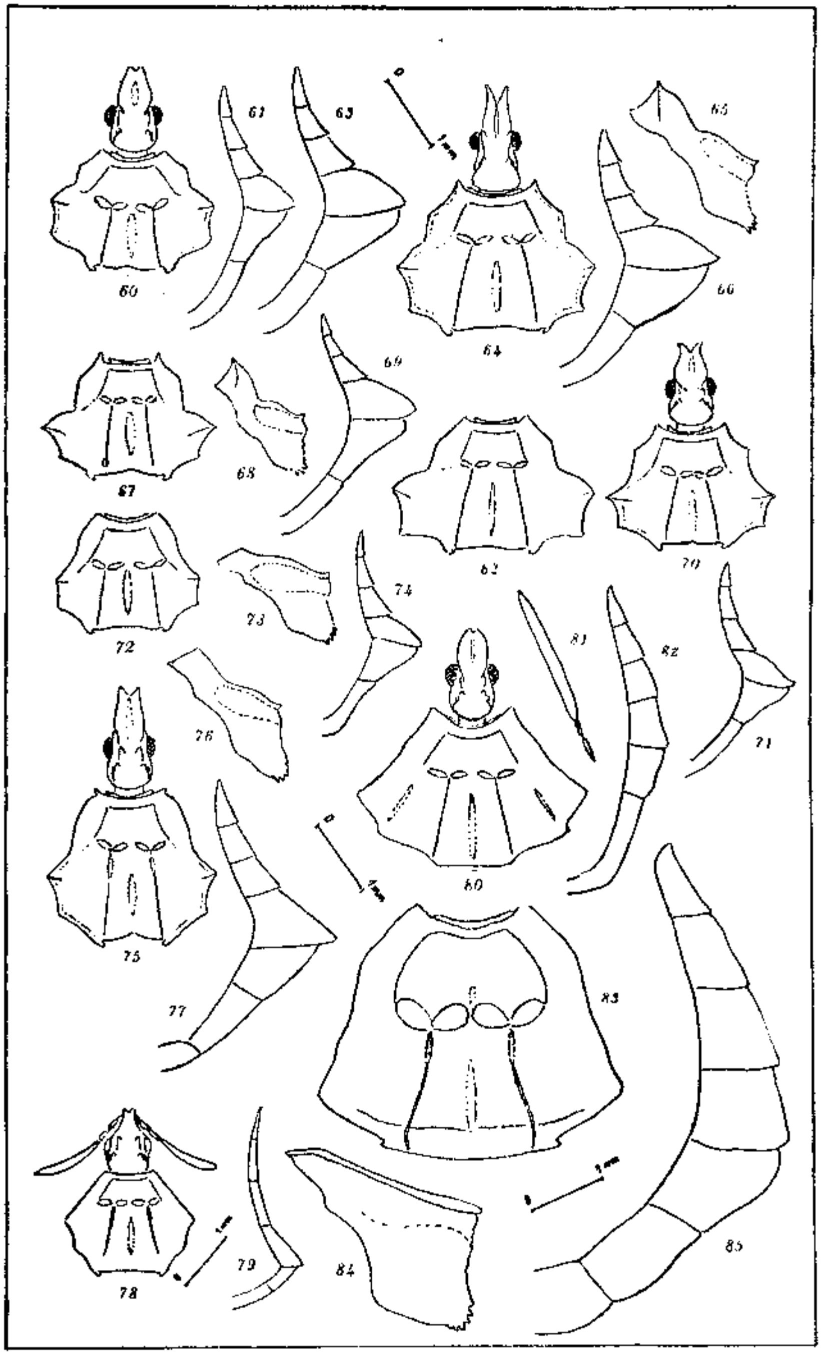
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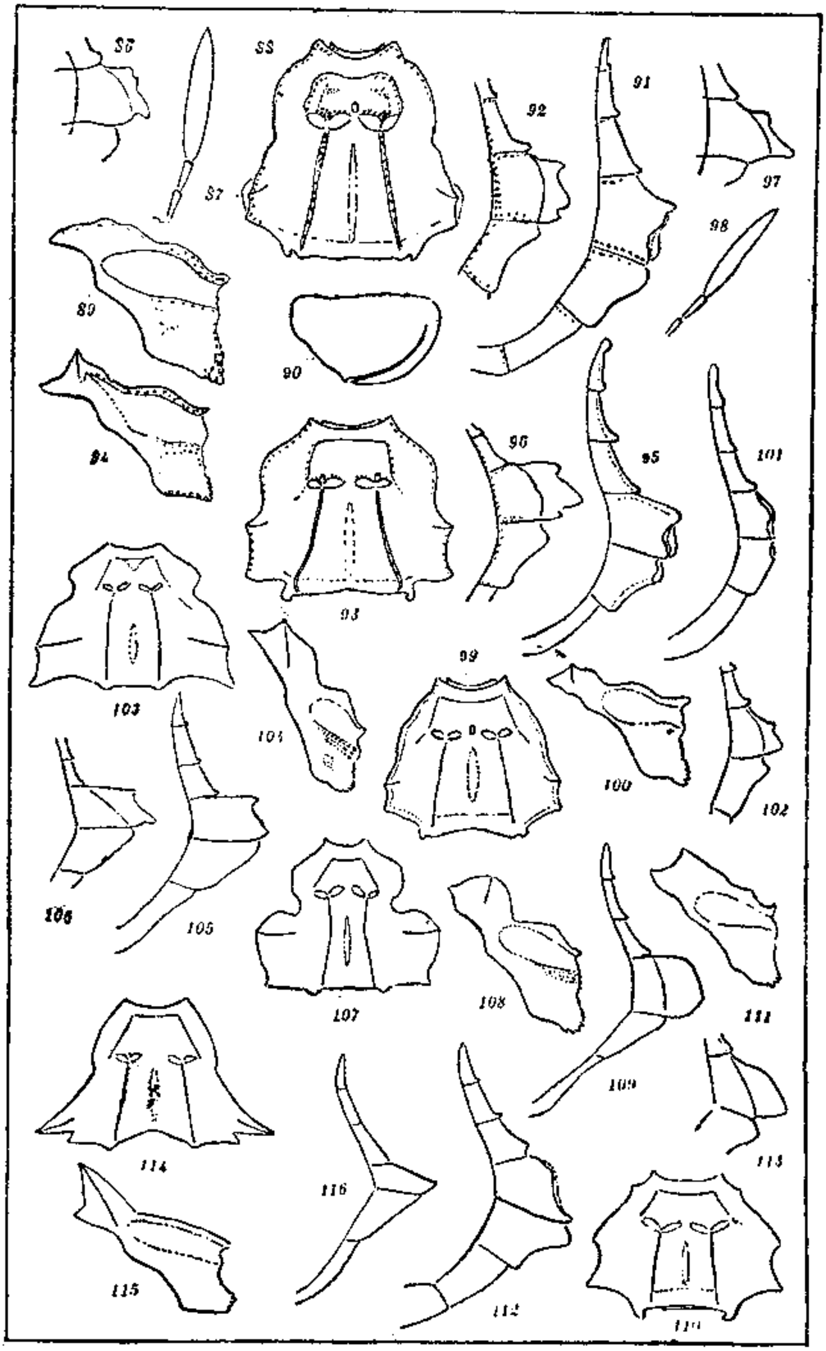

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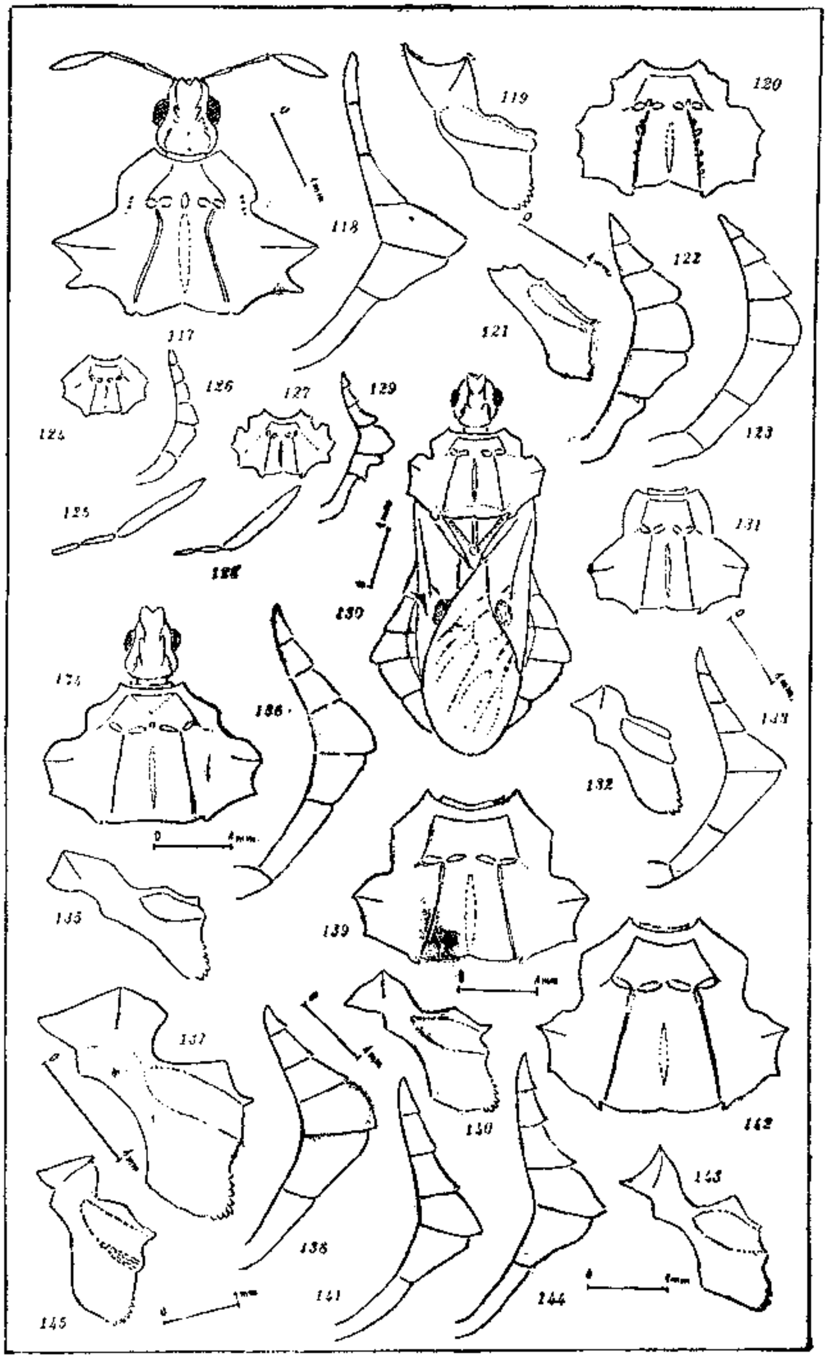
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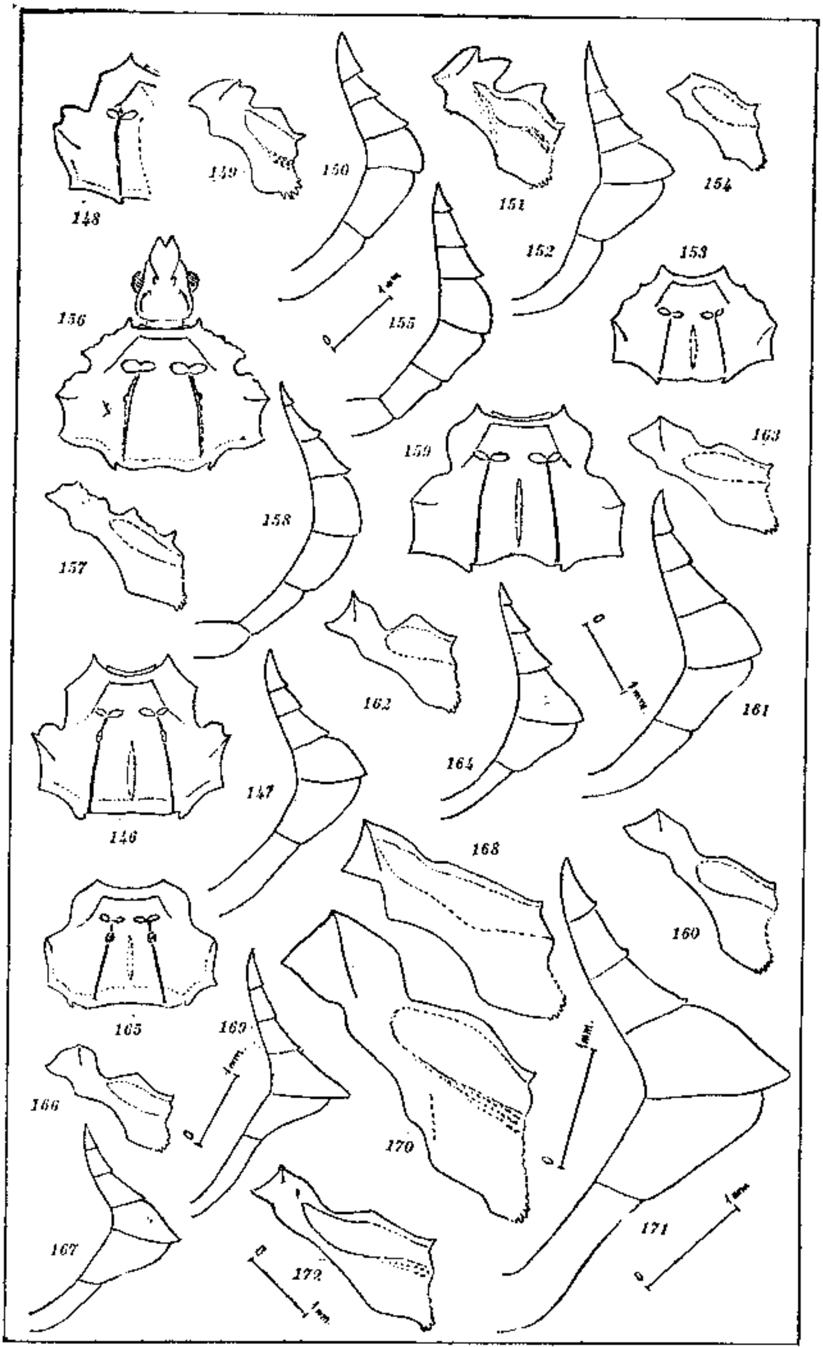
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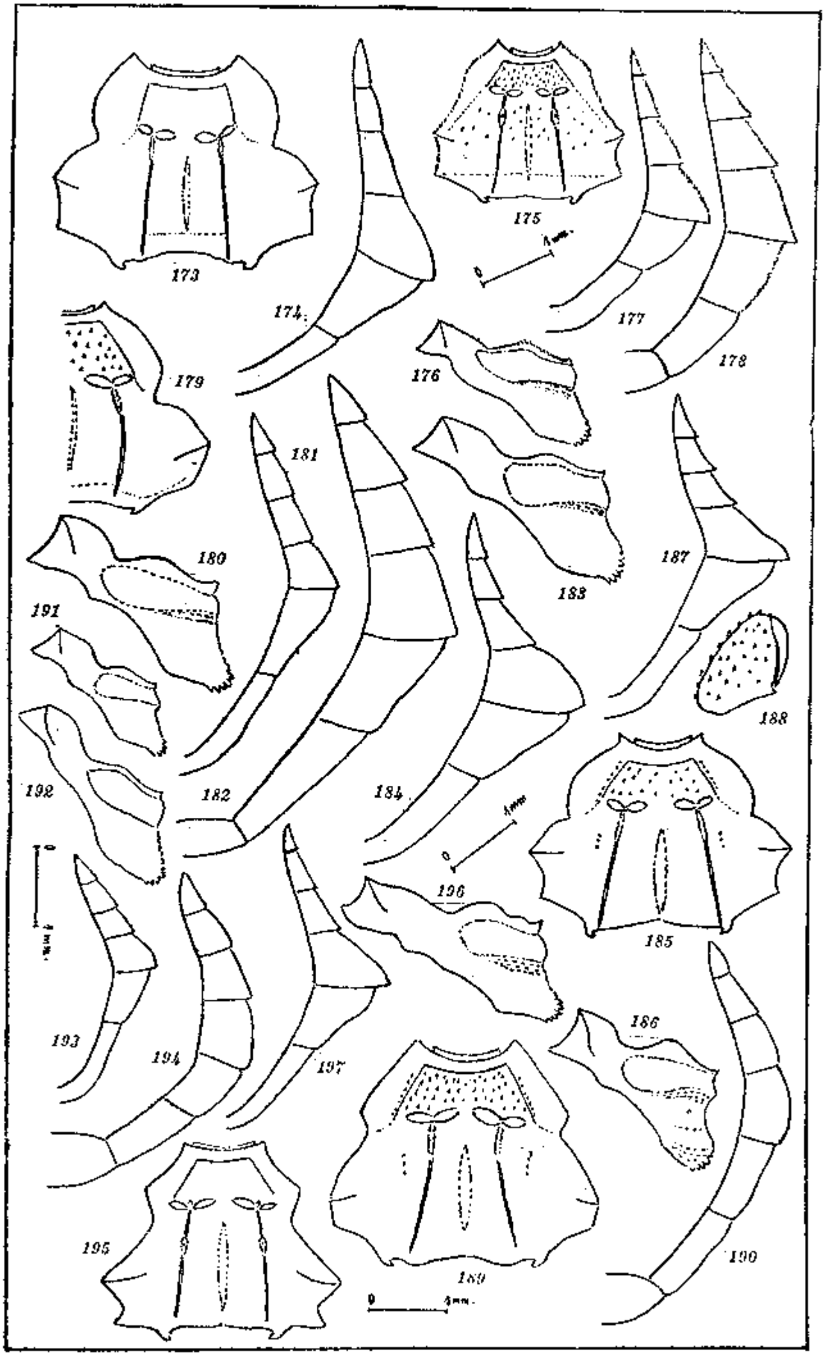
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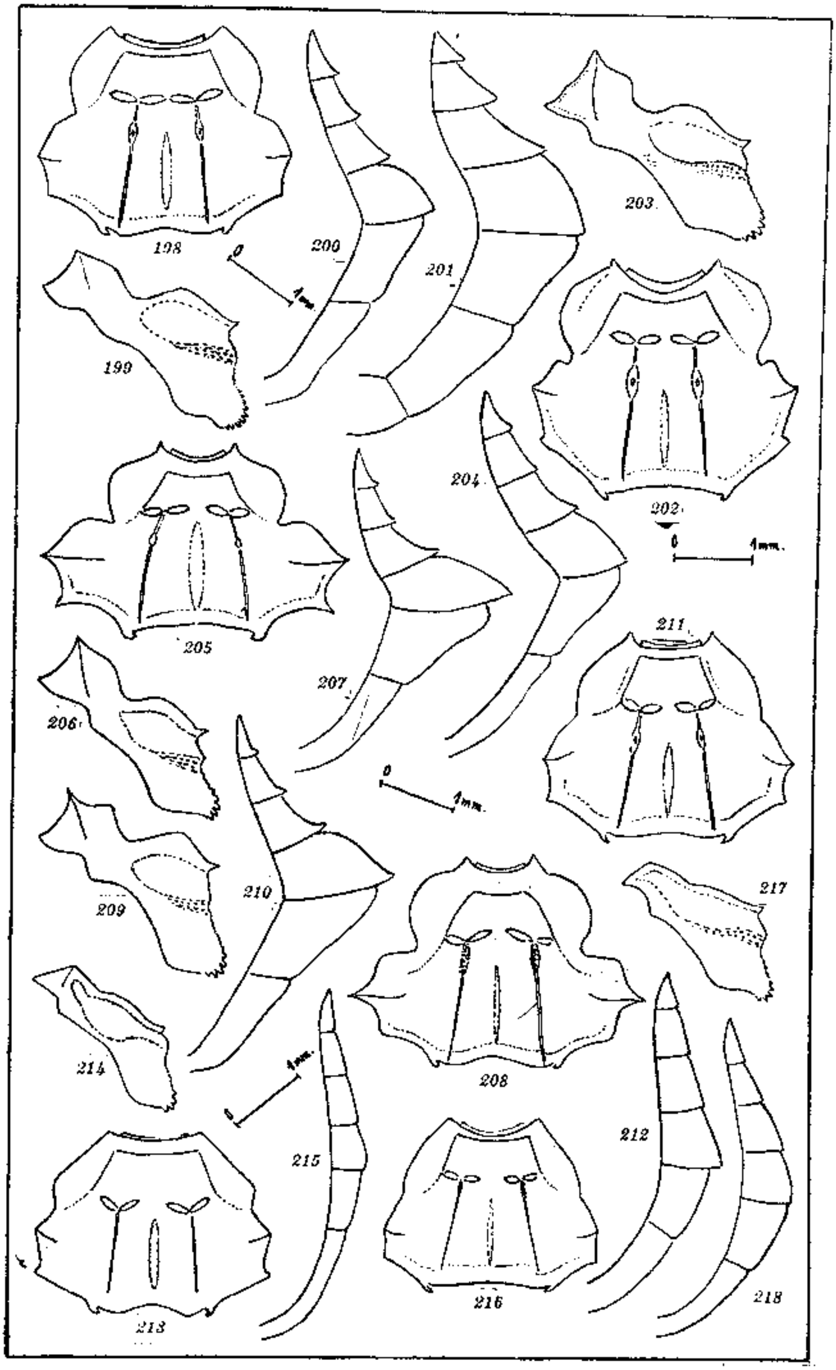
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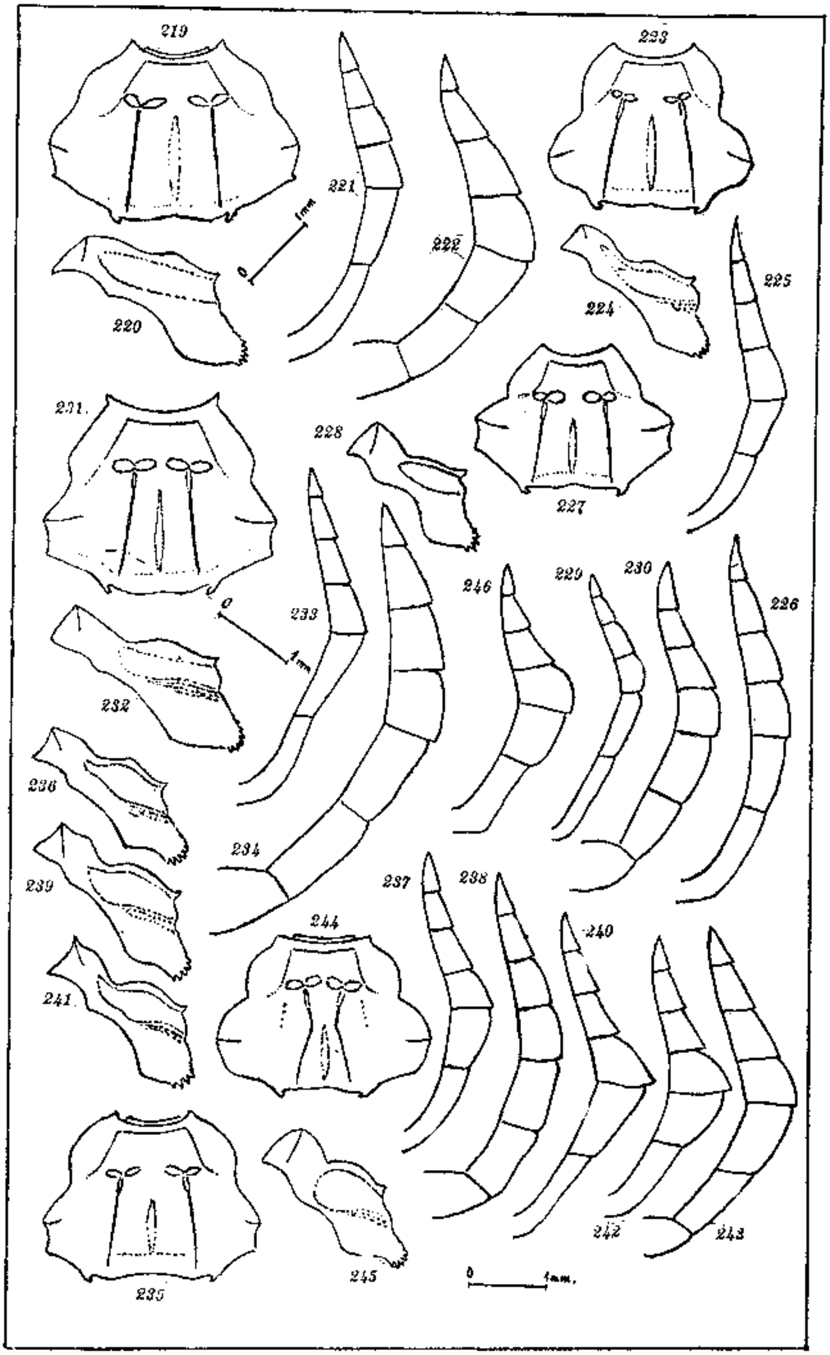
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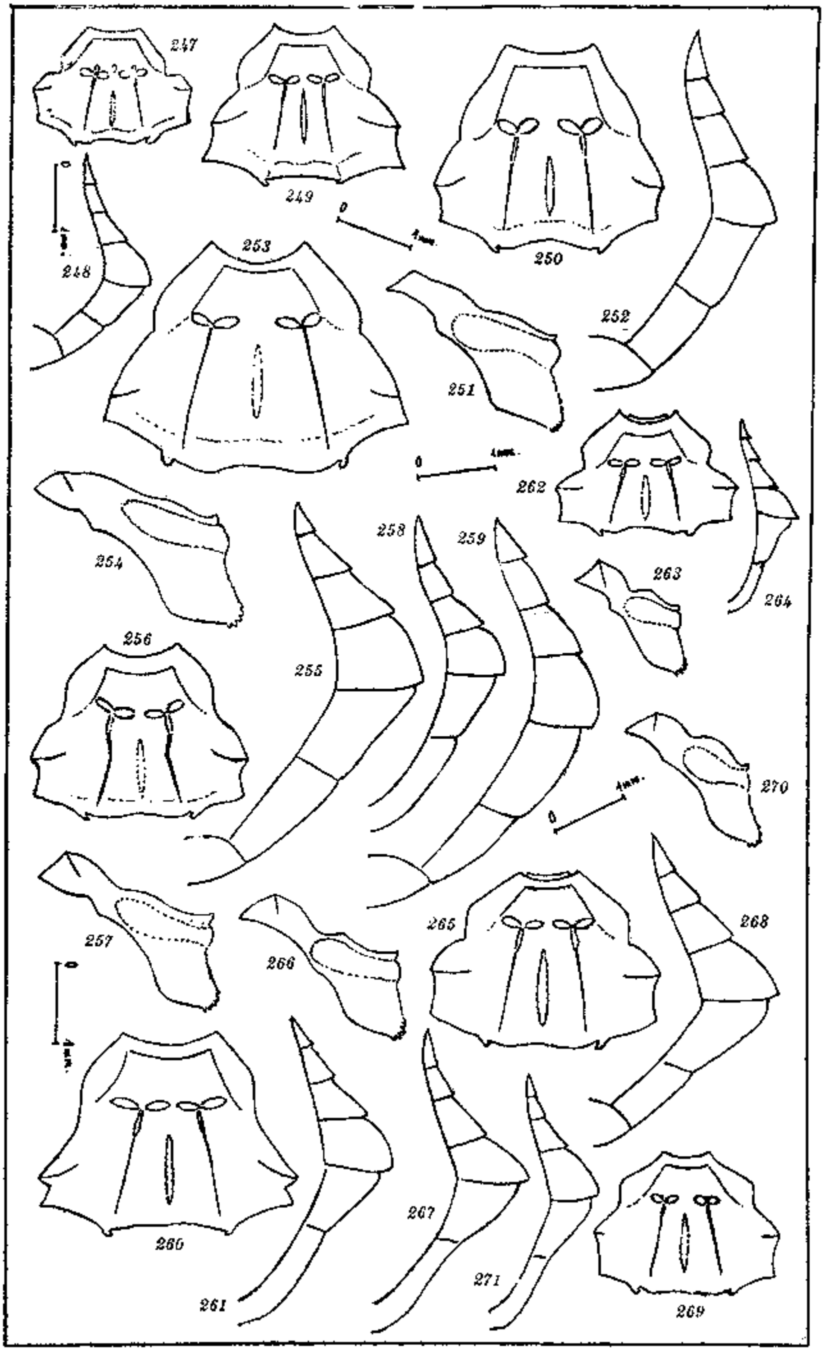
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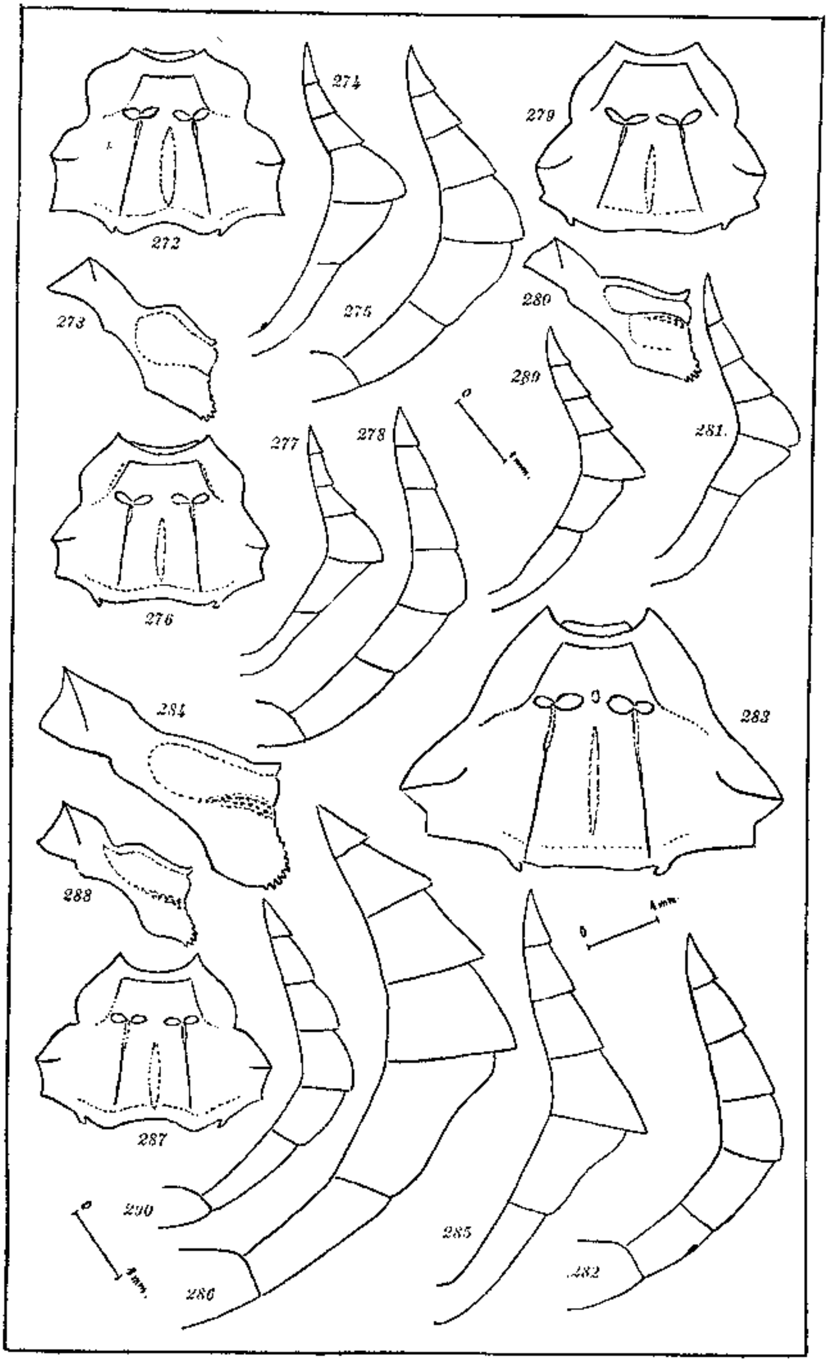
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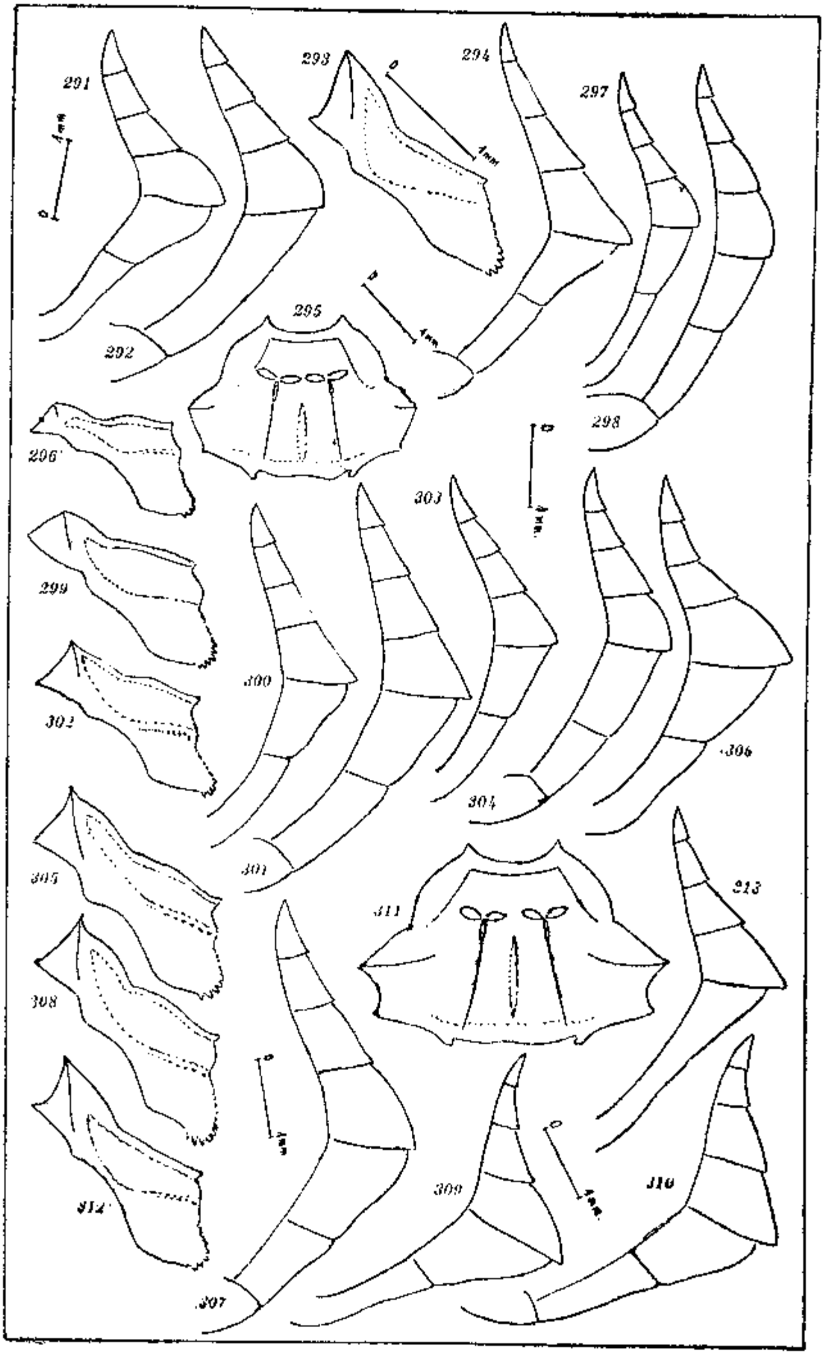
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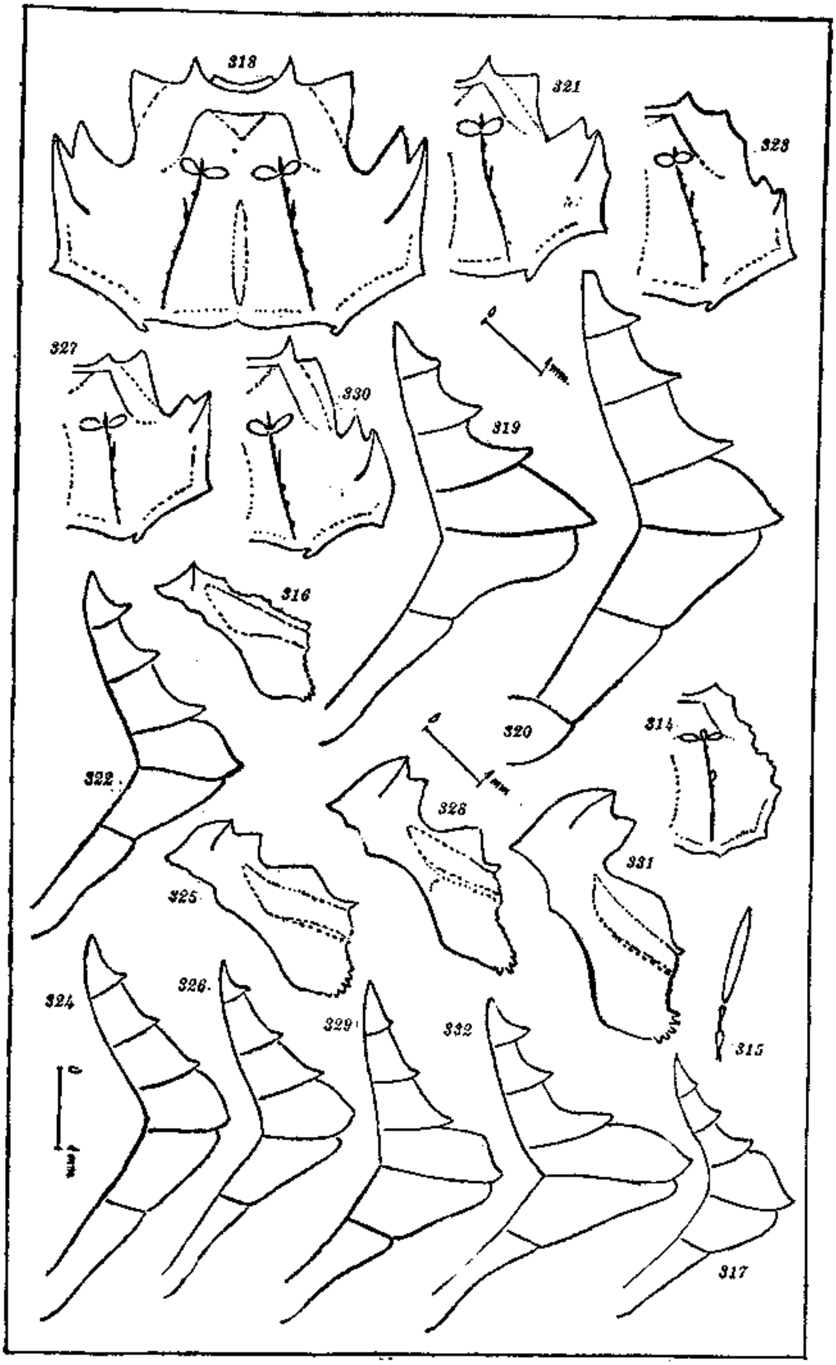
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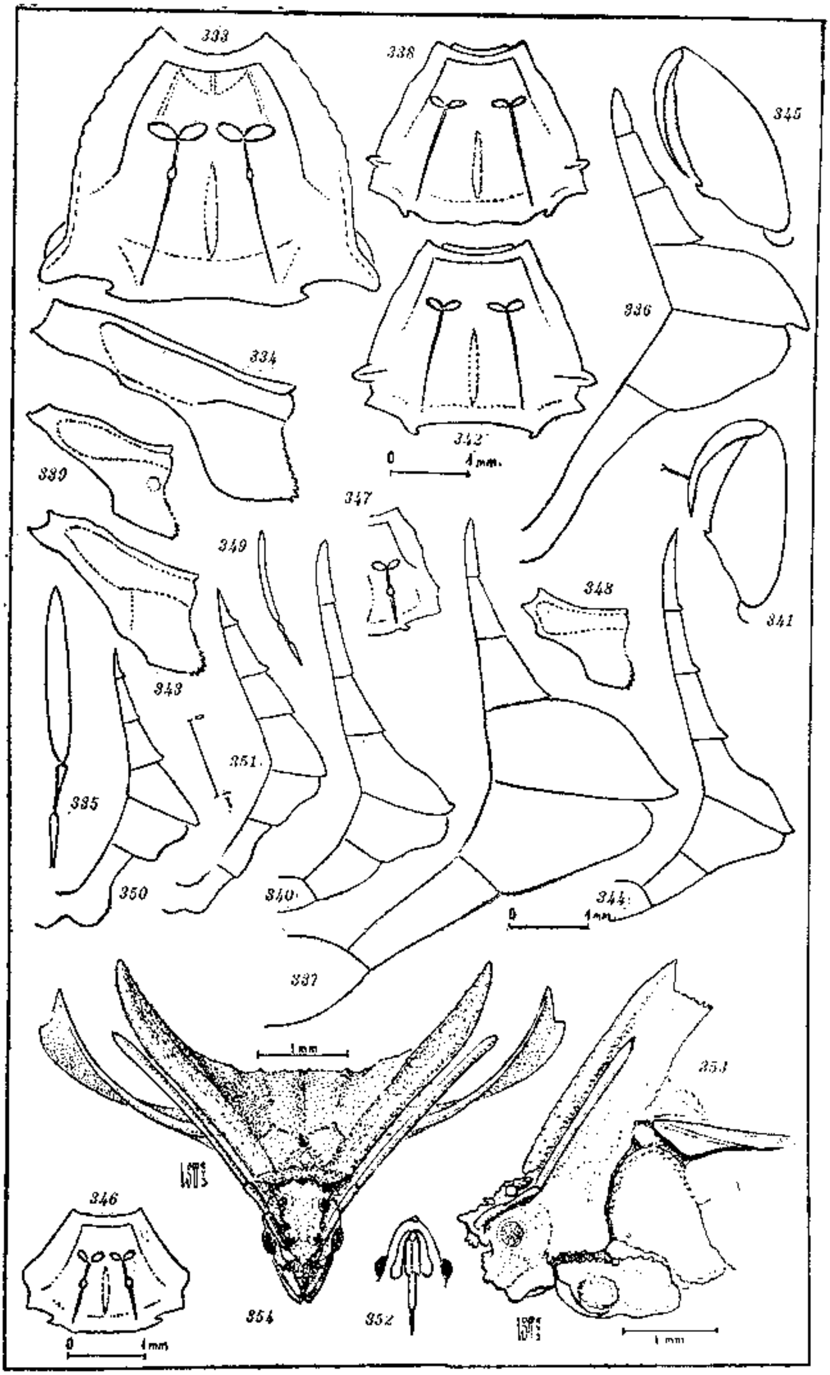
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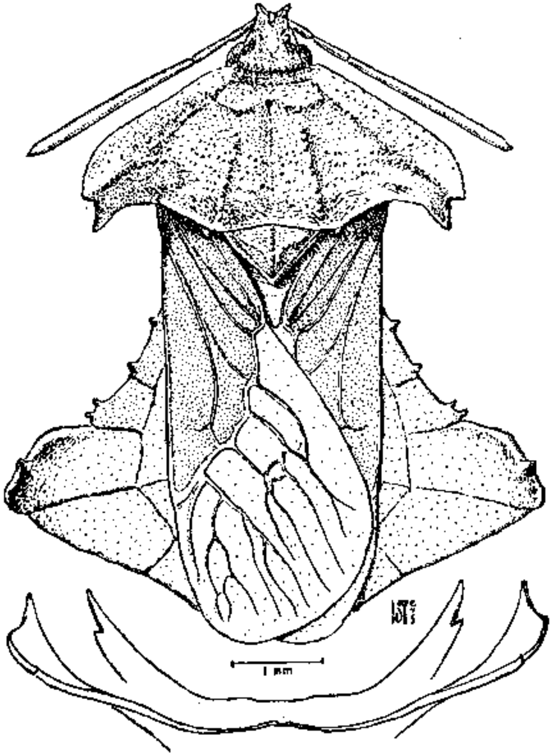

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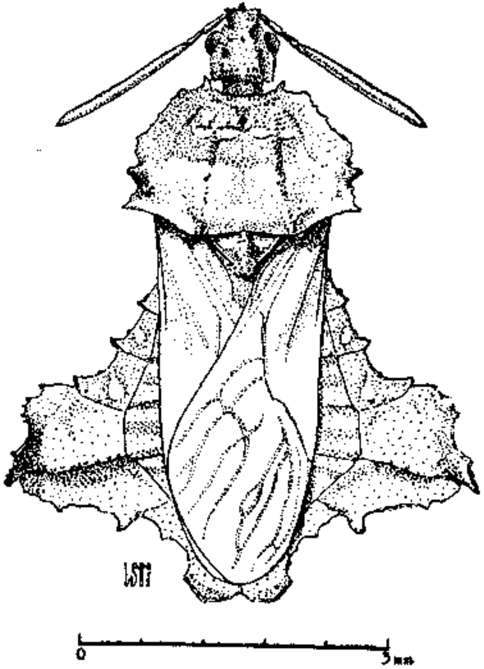

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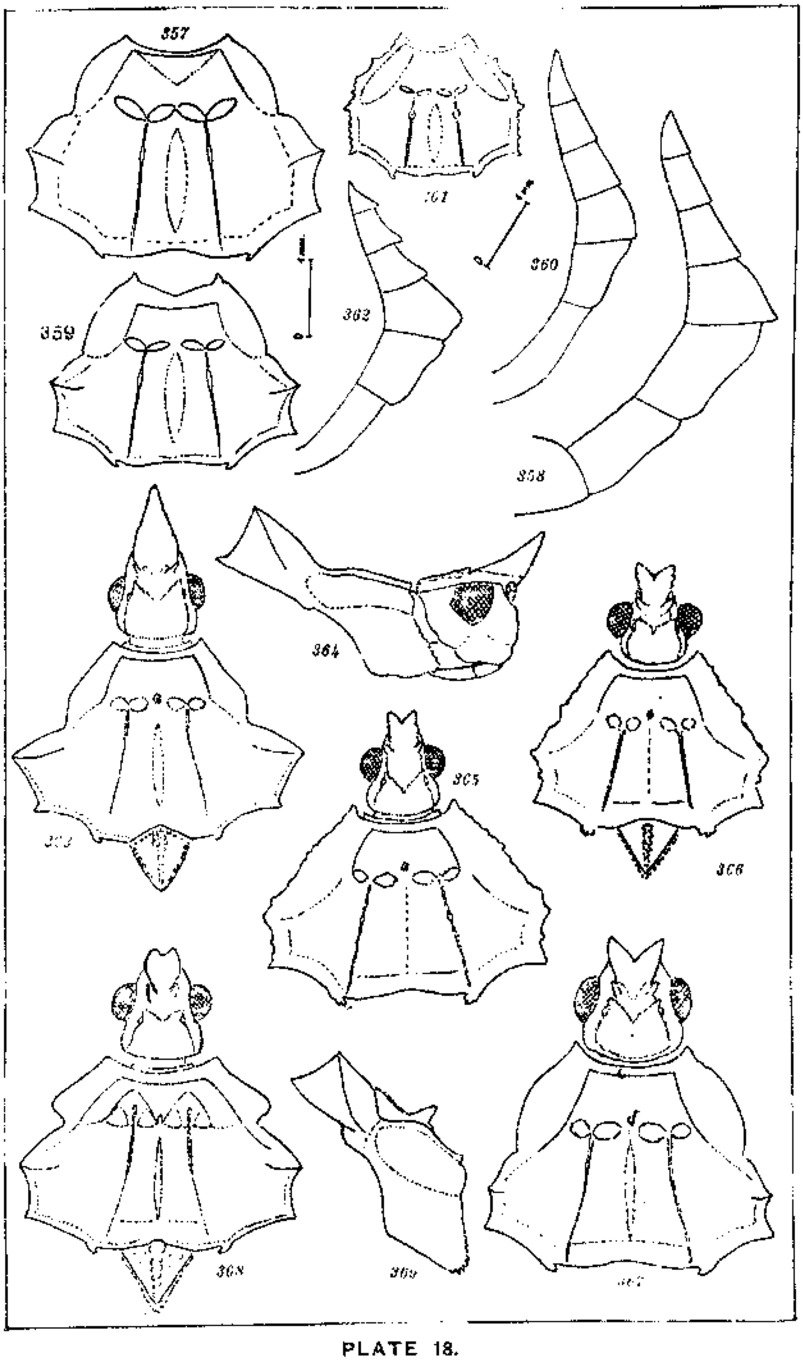

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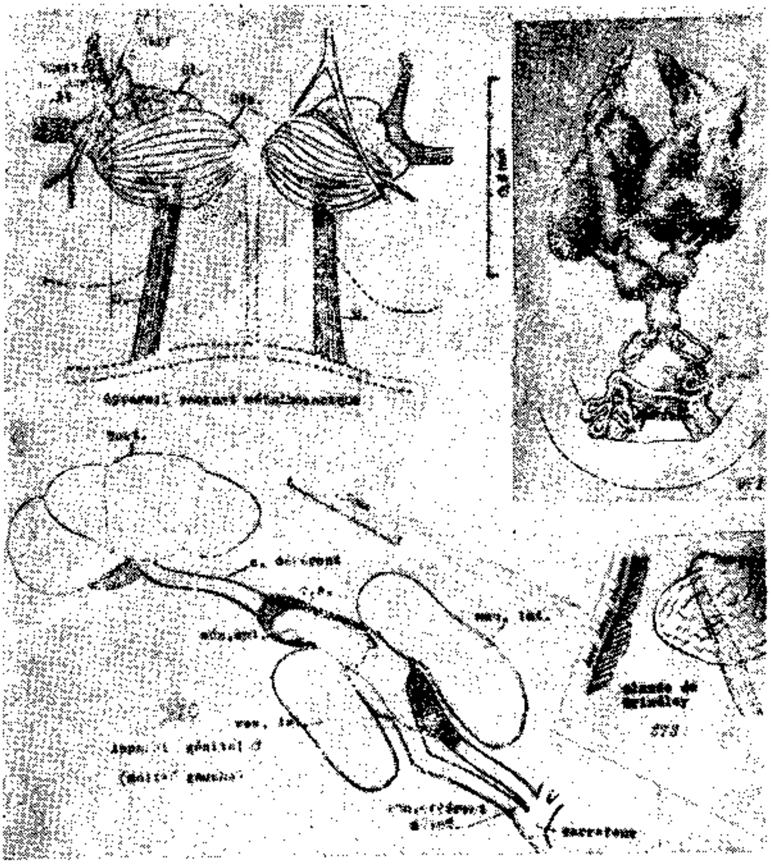
Appareil sonore métathoracique
c. déférent
ves. int.
Appareil génital ♂
(moitié gauche)
glande de Brindley
575

PLATE 19.

BOOK REVIEWS

Books reviewed in this section represent a selection from those received from time to time by the National Institute of Science and Technology and the Philippine Atomic Energy Commission, two sister agencies under the National Science Development Board.

Hydrodynamics of Ocean and Atmospheres. By Carl Eckart. Oxford, Pergamon Press, 1960, xi, 290 p. Price, $9.00.

"The most striking phenomenon of the earth's atmosphere is the diminution of its density with altitude. This stratification endows it with a stability that is completely lacking in a homogeneous fluid. Although it is not so well known, the earth's oceans are also stratified and have a stability of the same order as that of the atmosphere." With these opening statements Carl Eckart of Scripps Institution of Oceanography gives a systematic introduction to Hydrodynamics of oceans and atmospheres under the action of gravitational and Coriolis forces.

His approach to the problems of meteorology and oceanography is that of a mathematical physicist using the modern methods of atomic theory. This systematic use of modern methods of mathematical physics makes it possible to exhibit the relation between the many types of phenomena previously treated as isolated from each other. This is illustrated by the relation between Rossby's waves and Laplace's oscillations of the second kind.

Some well-discussed and very interesting topics are the effect of the density gradients which exist in the atmosphere and oceans on the motions of which they are capable and the problem concerning the effect of the Coriolis force.

Not only will meteorologists and oceanographers who wish an introduction to modern methods of mathematical physics find this useful but also the theoretical physicist who needs an introduction to meteorology and oceanography.—A.P.C.

Gas-cooled reactors; proceedings of the symposium sponsored, by the Franklin Institute and the American Nuclear Society, Delaware Valley Section, February 10–11, 1960. Lancaster, Pa., Franklin Institute, May 1960. viii, 349 p. (Monograph No. 7.)

Gas-cooled reactors is a summary of the papers presented at the symposium sponsored jointly by the Franklin Institute and the Delaware Valley Section of the American Nuclear

Society and is an up-to-date account of the progress achieved in the field of gas-cooled reactors as of May, 1960. From it one gathers the impression that the British certainly have been on the right track in pushing the development of the gas-cooled-type reactor. The recent work in this field, particularly in the United States, is also a vindication of the Daniels pile which Dr. Farrington Daniels and his group advocated as early as 1945.

As brought out in the symposium one of the early disadvantages held against the gas-cooled system was its low specific power as compared with those of liquid-cooled systems. However, the achievement of higher power density and higher gas pressure and by homogenizing reactor core, i.e., by intimate mixing of fuel and moderator, thereby resulting in better heat transfer.

An inherent advantage of gas-cooled systems is the higher temperatures attainable, such that the steam conditions approach those in conventional boilers. A more direct approach is the use of gas turbines, and developed work is going on in this direction.

Lastly, the attraction for a gas-cooled reactor for underdeveloped countries like the Philippines lies in the possibility of using natural uranium, or at worst, slightly enriched fuel, instead of highly enriched uranium.—M.R.E.

Quantum Particle Dynamics. By James McConnel. 2d ed. Amsterdam, North Holland Publishing Company, 1960. xi, 266 p. Price, ₱5.50.

This book is another convincing proof that a highly scientific and mathematical subject can be written and presented in a manner that holds one spell-bound throughout. It is not light reading, however, and it is intended for the faint of heart. Inspite of the author's claim that "the mathematical treatment has been kept as simple as possible and no more than a working knowledge of calculus and of elementary algebra is presumed," the presentation is done in the author's characteristic Irish way which leaves it to the student to fill up the gaps between equations. In a way, this is a challenge to a daring and adventurous student to prove his mettle and to delve deeper into the glorious realms of abstract mathematics. Each operation must have to be carried out thoroughly and meticulously. Only in this manner can the student reap the optimum benefit.

The serious student, at first, must go through a transition between the typically American (to which we are used) and a typically European (which is used throughout the book) method of vector algebra symbolisms. Prior acquaintance with the method, however, is not a necessity. The method can be picked up readily.

On the whole, it will be unwise to go through the book without a background of elementary quantum mechanics, and atomic and nuclear physics. The presentation of the Dirac Equation and the Quantisation of the Electromagnetic Field which are ultimately used in the discussion on Photoelectric and Compton effects as well as Bremsstrahlung and Electron Pair Production is very novel. The treatise on Nuclear Forces and Elementary Particle Interactions is done so beautifully that it leaves no doubt in the mind that this book should be an addition to the library of a theoretical as well as an experimental physicist.

This book is very appropriate as a text in a course in advanced quantum mechanics.—Z.M.B.

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[New names and new combinations are printed in italics.]

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